

Assessing Sustainability and Resilience in Tourism Destinations

Approaches for the development and implementation of destination sustainability and
resilience assessment methodologies

Der Fakultät Management und Technologie
der Leuphana Universität Lüneburg zur Erlangung des Grades

Doktorin der Wirtschaftswissenschaften

- Dr. rer. pol. -

vorgelegte Dissertation von Elena Eckert

geboren am 19.08.1995 in München

Eingereicht am: 01.03.2024

Erstbetreuerin: Prof. Dr. Hannah Trittin-Ulbrich, Leuphana Universität Lüneburg

Zweitbetreuerin: Prof. Dr. Dagmar Lund-Durlacher, Hochschule für nachhaltige
Entwicklung Eberswalde

Erstgutachterin: Prof. Dr. Hannah Trittin-Ulbrich, Leuphana Universität Lüneburg

Zweitgutachterin: Prof. Dr. Dagmar Lund-Durlacher, Hochschule für nachhaltige
Entwicklung Eberswalde

Drittgutachter: Prof. Dr. Markus Pillmayer, Hochschule München

Abstract

This cumulative dissertation centres around methodological approaches for the development and implementation of destination sustainability and resilience assessments. Assessments are introduced as a valuable tool to bridge the divide between high-level and international frameworks for sustainable development and practical strategies that are locally applicable in tourism destinations on the ground. Regarding the assessment of sustainability, the dissertation critically reflects on conventional practices of developing sustainable tourism indicators and formulates approaches for effectively assessing sustainability at destination scale through the adaptation of generic indicators and the adoption of more participatory and locally contextualised formats for indicator development. Regarding assessments of resilience, the dissertation first highlights and addresses the current lack of conceptual clarity about destination resilience and subsequently translates the conceptual insights generated by this discussion into a destination-specific resilience assessment methodology. Comprised of four research articles, the dissertation employs both qualitative and quantitative methods, including case study research, a Delphi survey, conceptual research, and the integration of transdisciplinary research. Taken together, all four studies clearly demonstrate the strong potential of more participatory methods of assessment to foster multi-stakeholder dialogue, raise awareness, stimulate learning, and promote actor networks in tourism destinations. The empirical findings and theoretical insights underscore the importance of boosting the abilities of local tourism actors to promote sustainability and build resilience rather than treating assessments as tasks to be performed as an end in themselves. The dissertation introduces, pilots and reviews a number of participatory methodologies for assessing sustainability and resilience highlighting key insights yielded from their implementation in various case study destinations. Overall, the dissertation makes the case that flexible approaches which prioritise usability over precision and are tailored to local contexts are highly expedient for scaling up sustainability engagement, building local capacities, and initiating resilient action in tourism destinations.

Keywords: sustainability, resilience, assessment, sustainable tourism, destination management

Table of Contents

1	Introduction	1
2	Philosophy of research and rationale of the research approach	5
2.1	Philosophical approach to research.....	5
2.2	Situating the dissertation in the research context	9
3	Conceptual framework.....	10
3.1	The role of resilience in the transition towards sustainability.....	10
3.2	General considerations about assessments	11
3.3	Considerations about the scale of assessment.....	12
4	Structured synthesis of research contributions	14
4.1	Article 1: Measuring sustainability in tourism destinations - Adaptation of existing sustainability indicator sets to local conditions	15
4.2	Article 2: Indicator development for destination sustainability assessment: Scientific, political and participatory perspectives on decision-making	23
4.3	Article 3: Towards a future conceptualisation of destination resilience: exploring the role of actors, agency and resilience narratives	28
4.4	Book chapter: From Global Frameworks to Local Meanings: Building Resilience for Sustainable Destinations	32
5	Conclusion	38
6	References.....	43

Annex

- I. Exemplary excerpts from data collection in Windhoek, Namibia
- II. Declaration of authorship
- III. Eckert, E. & Hartmann, R. (2020): Measuring sustainability in tourism destinations: Adaptation of indicator sets to local conditions illustrated by the example of Windhoek, Namibia, *Journal of Tourism Science*, Vol. 12, No. 3, pp. 370-390
- IV. Eckert, E. (2022): Reconciling scientific, political and participatory perspectives on sustainable tourism indicator development for destination sustainability assessment, *Tourism Planning & Development*
- V. Posch, E.; Eckert, E. & Thiebes, B. (n.y.): Towards a future conceptualisation of destination resilience: Exploring the role of actors, agency and resilience narratives [accepted for publication in the *Journal of Tourism Futures*]
- VI. Eckert, E. & Posch, E. (n.y.): From Global Frameworks to Local Meanings: Building Resilience for Sustainable Destinations, in Pillmayer, M.; Hansen, M.; Karl, M. (Eds.), *Tourism destination development: A geographic perspective on destination management and tourist demand*, De Gruyter, Oldenbourg, Germany [published]

List of Figures

Figure 1: Research design (Source: Own figure based on Eisenhardt 1989; Firestone 1993; Reihlen 2021; Yin 2003)	16
Figure 2: Identification of aggregate dimensions (Source: Own figure based on Gioia et al. 2013)	19
Figure 3: Delphi survey process (Source: Own figure).....	25
Figure 4: Modelling a theoretical proposition (Source: Own figure based on Whetten 2009).....	26
Figure 5: Destination Resilience Model (Source: Own figure based on DKKV & Futouris 2022).....	31

List of Tables

Table 1: Structure of articles within the dissertation project	14
Table 2: Four tests to verify the quality of empirical social research (Own table based on Yin 2003).....	21
Table 3: Metrics of the Delphi survey.....	24
Table 4: Destination Resilience Model implications of the proposed theoretical baselines....	30
Table 5: Five-step assessment methodology with related conceptual elements, key questions and TDR knowledge types	33
Table 6 Overview of data collection methods from case study destinations	34

Abbreviations

DMO	Destination management organisation
DRR	Disaster risk reduction
SA	Sustainability assessment
SDGs	Sustainable Development Goals
SEEA	Systems of Environmental Economic Auditing
SES	Socio-ecological system
SNA	System of National Accounts
STIs	Sustainable tourism indicators
TDR	Transdisciplinary research
UNDRR	United Nations Office for Disaster Risk Reduction
UNEP	United Nation Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNWTO	United Nations World Tourism Organization

1 Introduction

As a fundamental requirement for sustainable tourism development, long-term policies are needed that balance economic development with environmental protection and social well-being without jeopardising the integrity of planetary resources. As one of the world's largest industries, tourism has the responsibility and capacity to contribute significantly to sustainable development on a global as well as local scale (Saarinen and Gill 2019). The immense complexity and challenge of this task is exacerbated, however, by ever-greater pressure on the industry to act due to increasing systemic perturbations, acceleration of climate change, and the increased frequency of crisis events. In this context of heightened uncertainty, endeavours to promote and ensure sustainable development are increasingly required to incorporate and operationalise the concepts of risk and resilience (Opitz-Stapleton et al. 2019; Prayag 2023). Within the conceptualisation of this dissertation, resilience is not understood as a static trait but as denoting the evolving abilities of people to take effective action in adverse circumstances. Increasing people's capacity to build resilience can thus act a powerful catalyst for more sustainable development as neglecting the existence of risk cannot only jeopardise previous sustainability advancements but also undermine future efforts towards sustainable development. Attaining a better understanding of the close links between sustainability and resilience therefore provides a high potential for making sustainability initiatives more effective in their intended contributions (GIDRM n.y; Opitz-Stapleton et al. 2019).

Analysing the connections between sustainable development and tourism planning is vital to inform efforts supporting the global priorities of the 2030 Agenda, with 'sustainable tourism' being directly called for in the Sustainable Development Goals (SDGs). Given the extent to which tourism depends on undamaged ecosystems, undisrupted global travel activity and socio-cultural exchange, this industry has a specific interest in safeguarding past sustainability achievements, building resilience, and controlling and predicting risk (UNWTO 2023). From a tourism perspective, a sustainable tourism destination is understood as a multi-stakeholder environment in which industries and communities converge in their efforts not only to deliver a high-quality guest experience but also to increase the quality of life for residents and conserve and protect the environment (Bello et al. 2016; Choi and Sirakaya 2006).

Assessments of sustainability and resilience in tourism have become widely adopted as a tool supporting efforts to bridge the divide between global and subordinate concepts of sustainability and resilience and making these concepts operational for application. Such efforts have been hampered, however, by a persistent lack of methodological and conceptual consensus on approaches for developing and implementing destination sustainability and resilience assessments. In the context of assessing sustainability, the sheer complexity of this issue, combined with a lack of clarity in the definition of 'sustainable development' and the lack

of a global standard, has given rise to a multitude of approaches for measuring sustainability in tourism destinations (Kristjánsdóttir et al. 2017; Lozano-Oyola et al. 2012; Pulido-Fernández and Rivero 2009; Singh et al. 2009; Torres-Delgado and Palomeque 2014). Within these approaches, using sustainable tourism indicators (STIs) for destination sustainability assessments (SAs) has become widely recognised as a tool for measuring the progress towards or regress away from sustainable tourism development (Castellani and Sala 2010; Crabtree and Bayfield 1998; Ko 2005). In the context of assessing resilience, meanwhile, inconsistent usage of terms and lack of conceptual clarity also dominate the research landscape, which is why many tourism studies on the topic of destination resilience still fall short of clearly positioning themselves in the wider academic debate.

The topic of sustainability and resilience assessment is at the core of this dissertation, though the extent and depth to which each concept will be explored in the dissertation varies due to differences in 1) the definition of these two concepts in relation to the destination context, 2) the coverage of these concepts in the current landscape of tourism research, and 3) the conceptual implications of developing an assessment methodology. In the sustainability assessment context, research on the need for STIs and their application, as well as on the shortcomings associated with their current use has been extensive (Blancas et al. 2011; Miller and Twining-Ward 2005; Torres-Delgado and Saarinen 2014). Moreover, myriad sets of STIs within specific contexts have been developed (cf. Diéguez-Castrillón et al. 2021). It is only the process of indicator *development* that has received surprisingly little attention (Asmelash and Kumar 2019; Bell and Morse 2018; Islam et al. 2021; Ramos 2019). This gap in research applies both to the adaptation of STIs to diverse destination contexts as well as to the harmonisation of bottom-up and top-down approaches. Setting out to address this gap, this dissertation proposes advanced and more inclusive and participatory methodological approaches for effectively developing STIs, exploring ways to adapt and indicators and implement assessments that reflect and account for local destination circumstances. The need to find a balance between local relevance and global comparability is thus addressed by presenting and discussing new formats of STI development that reflect the needs of all stakeholder groups at local and global level.

In the context of resilience on the other hand, direct engagement with assessment is impeded by three main factors: 1) the fuzziness of the term 'resilience' in tourism research; 2) the conceptual peculiarities inherent to this concept; and 3) the lack of established methodologies for assessing resilience. The first of these can be attributed to the fact that resilience has been studied in various academic disciplines, each with their own different epistemologies, origins and usages of terms (Aliperti et al. 2019; Posch et al. n.y.). The second factor relates to the complex adaptive and dynamic element of resilience, resulting in the fact that the concept does

not lend itself easily to measurement. A static and numerical assessment approach to resilience proves inexpedient because it pays insufficient attention to change and complexity (Amore et al. 2018; Pyke et al. 2021; Quinlan et al. 2016). Prayag (2023) emphasises the lack of studies that address the operationalisation of the theoretical concepts related to resilience through collecting empirical evidence at destination level and the development of strategies on how destinations can become more resilient. This directly ties into the third factor, since the lack of an established methodology will continue to impede effective resilience assessment research for as long as it remains unclear what 'being resilient' actually implies in a destination context. Further compounding the endeavour of building resilience is the plethora of risks that need to be considered in any resilience strategy, including environmental, economic, political, infrastructural, and biological risks.

To overcome these difficulties regarding resilience, this dissertation first takes a step back prior to conducting actual resilience assessments to resolve the ambiguity surrounding the concept of resilience by tracing narratives within various academic disciplines that study the conceptualisation and operationalisation of destination resilience. The findings of this review of the literature are then translated into a conceptual elaboration including a destination resilience model that then serves as a baseline for the development of a novel assessment methodology. Through transdisciplinary research, the dissertation explores how the relevant actors in destinations can understand and address risk and thus develop resilience-building strategies that are locally meaningful and effective. This endeavour is guided by addressing the overarching research question of *How to conceptualise and implement methodologies for destination sustainability and resilience assessment?* This question is answered through conducting and drawing on the findings of four studies in four different articles. While these articles form a single body of work, they are summarized separately below before the findings are synthesised in a concluding section.

The first article focuses on the development and implementation of an SA methodology in a destination context. The study offers a conceptual baseline for the implementation of a sustainability assessment and subsequently illustrates a refinement of sustainability assessment methodologies based on the principle of adapting STIs to the specific circumstances in a destination. The analysis and findings of this article are based on a case study of a sustainability assessment conducted in Windhoek, Namibia and thus offers great leverage for the consideration of local destination circumstances for an assessment.

The second article expands and deepens the understanding of STI development by investigating not only how indicators can be adapted but by how they can be developed from scratch merging bottom-up and top-down approaches. Using a Delphi survey, Article 2 explores how to reconcile the different priorities and approaches proposed by three parties,

namely scientists, policymakers, and supporters of participatory decision-making. In doing so, the article addresses the broader methodological and conceptual foundations of STI development by structuring the debate, evaluating existing and new approaches, and illustrating how formats that facilitate stakeholder participation can inform future STI development.

Article 3 sets the baseline for further enquiry into resilience as a prerequisite for sustainability. This conceptual research article elucidates the concept of resilience specifically in a destination context and problematises the theoretical assumptions as well as the implications for theory, methodology and practice that result out of the interrelationship between destination and resilience. The article identifies three themes for the future conceptualisation of destination resilience and introduces a destination resilience model.

The fourth and final article ties the previous findings together by revisiting the nexus between sustainability and resilience and translating the theoretical baselines derived from conceptual research into a novel methodological approach. Drawing on three case studies, this article reiterates and applies the strong emphasis placed on destination context in Article 1, the participatory approaches to sustainability assessments outlined in Article 2, and the theoretical baseline elaborated in Article 3 that stresses the importance of involving tourism actors by adopting an agency-based perspective on resilience.

This framework paper first situates the research topic of the dissertation within the philosophical and overall academic debate and elaborates on the conceptual considerations that inform sustainability and resilience research. Each of the four research articles are then introduced and discussed separately before the overall findings and contributions of the dissertation are synthesised in the concluding section of this framework paper.

2 Philosophy of research and rationale of the research approach

2.1 Philosophical approach to research

This chapter outlines the epistemological perspectives and ontological assumptions underpinning this dissertation and its research design for addressing the gaps identified in the preceding chapter. After elucidating the shared assumptions, key concepts and principles on which the dissertation project is based, the chapter provides a rationale for the methodologies employed in the investigation.

This dissertation can be situated in the research philosophy of realism. Realism is based on the premise that “the external world exists independently of our sense experience, ideation, and volition, and that it can be known“ (Bunge 1993, p. 229). Realist thinkers make it their central aim to explore and recognise generalisable patterns, connections and causes in ‘the world out there’. Within realism, a critical realist perspective is employed that accounts for unobservable phenomena by recognising the emergent properties of social structures. Realist thinkers challenge the prevailing paradigms of positivism and hermeneutics by asserting the capacity of both natural and social sciences not only to observe and interpret but also to provide explanations (Gale and Botterill 2005). Critical realism emphasises the distinction between knowledge that we possess (epistemology) and knowledge that is already established (ontology) (Bhaskar 2011). Foregrounding ontology over epistemology, a significant proportion of the critical realist project in the social sciences is based on probing the question of ‘What makes society possible?’ (Gale and Botterill 2005). Extended to tourism research, this question can be reframed as ‘What makes the study of tourism possible?’ (Botterill 2003). In the same vein, this research project asks ‘What makes sustainability and resilience possible?’. In addressing this question, the dissertation leaves the empirical conventions of positivism and focuses instead on uncovering mechanisms and causal powers in social structures (Carter and New 2004).

Realism is well-suited as a paradigm for researching sustainable development and resilience in a tourism context since it allows for recognising the interrelationships between tourism actors across the different levels of a tourism system as well as the element of constant change and the role of agency and learning. While accepting the objectivity of ‘nature’, a realist perspective acknowledges that some ‘facts’ are constituted through the meanings people attribute to them whereas others can be meaning-independent (Little 1993). From this standpoint it is possible both to observe processes and changes in the natural world as well as to explore perceptions of this world. Such perceptions can be relevant for critical realists, though they are understood as not being completely detached from their structural contexts.

Regarding the ontological assumptions of this research project, i.e. the beliefs about the fundamental nature of reality, the approach adopted in this dissertation is consistent with a broad consensus that tourism is a socially constructed and socially related realm, with humans being the co-creators of and participants in tourism reality (Butowski and Butowski 2023). Consequently, the basic assumption for this research is an ontologically subjective one that recognises the socially constructed nature of reality, i.e. that social phenomena are not objective but instead interpreted by the shifting intentions, meanings and beliefs of those observing these phenomena (Little 1993). As such, the research carried out for this dissertation is based on the understanding that it is shared perceptions and their interpretations that are generally action-relevant. A subjectivist approach is adopted because the phenomenon under investigation, i.e. the resilience of the tourism system, is influenced by and created through the actions of social actors in that system. Sustainability is based to a large extent on planetary boundaries and equilibria within these boundaries and thus lends itself more to quantitative representation of these forces. It is important to note, however, that social behaviour and complexity must nonetheless be accounted for when inquiring about sustainability from a social science angle with a focus on sustainable development. According to critical realism, the nature of reality is made up of three nested layers: the empirical, the actual, and the real (Bhaskar 2016). This ontology affords a crucial role for casual explanation and the centrality of emergent properties (Carter and New 2005). A realist ontology has high potential value for research on sustainability and its management because it does not focus exclusively on observable and measurable evidence but recognises mechanisms and emergent events across different scales. In sum, critical realism enables critical engagement with structural mechanisms related to political or historical drivers and offers a critical lens through which to question taken-for-granted assumptions (Cockburn 2022).

Closely entwined with these ontological assumptions is the epistemological perspective thereof. The choice of epistemological position leads to the employment of different methods as it determines how knowledge is gathered. Although the assessment of sustainability using STIs is traditionally associated with a positivist epistemology centred on the systematic observation of natural, societal and actors' properties through data, other interpretations of sustainability gravitate more towards realism. In this project, efforts to promote sustainable development and in building resilience are, among others, understood as being influenced by ideologies, perceptions and power structures but also by taking place in natural environments with objective properties.

Following the new-realist approach in tourism research proposed by Butowski and Butowski (2023), the perspective adopted in this dissertation acknowledges the possibility of arriving at epistemically objective judgements on phenomena that are ontologically subjective.

This approach lends itself to tourism research in the field of sustainability and resilience since many processes and causes can be objectively grounded in biological and physical phenomena. For example, the judgements that “the sea level is rising” and that “glaciers are now melting quicker than in the past” are epistemically objective because their truth or falsehood is not influenced by attitudes or feelings (Butowski and Butowski 2023). However, when it comes to inquiring about people’s perceptions of risk and the existence of resilience (i.e. their ability to act) a dependence on human feelings, attitudes and points of view becomes evident. The judgements about tourism actors’ perceptions of risk are thus epistemically subjective, which is why the methods used in this work centre predominantly on actors’ perceptions, attitudes, values and interpretations. When understanding resilience as an ability, the perceptions of tourism actors in a destination and their willingness to engage are recognised as strongly influential in building resilience, consistent with and supportive of framing resilience as socially constructed. Reflecting this recognition, Matteucci et al. (2022, p. 173) have coined the term “participatory epistemology” in proposing non-hierarchical and collaborative practices that take account of diverse knowledge repertoires.

The research questions of this dissertation are formulated according to the principles of problematisation, i.e. with the aim of challenging taken-for-granted assumptions and critically scrutinising established knowledge as a way to uncover new avenues of inquiry (Alvesson and Sandberg 2011). Accordingly, the research specifically addresses existing social biases, political agendas and existing world views, focusing on central issues such as comparability and scientific rigour as well as the need to overcome Eurocentric biases and to address the lack of participatory and inclusive approaches to assessing sustainability and resilience-building in tourism destinations. Based on this problematisation, the dissertation elaborates and empirically tests alternative approaches and methodologies for both assessing and actively catalysing sustainable development and building resilience.

This approach to doing research is closely connected to the axiological assumptions in which this research is grounded. Axiology is concerned with the role of values and moral choices. It is a critical component of research as it describes how a researcher’s values influence the method, epistemology and ontology of their own work (Pernecky 2023). In applying principles of problematisation to challenge tenets uncritically adopted in previous research, the approach adopted in this dissertation reflects and contributes to the “moral turn” in tourism scholarship (Markwell 2020, p. xvii). This is achieved by adopting alternative methodologies supporting efforts to make tourism just and fair for all actors involved, specifically showing how tourism can be made more inclusive, abolish western-centric approaches, respect planetary boundaries and recognise social justice for societal betterment. More participatory and locally anchored approaches are employed and envisioned to inform the research from an

epistemological perspective in deciding what we decide to accept as true. In terms of adding value to the social system, the research prioritises ways to promote collective well-being by breaking up power asymmetries and encouraging the representation and empowerment of local communities. This contribution resonates strongly with the principle stated by Jamal and Camargo (2014) that “active and informed civic participation is a necessary bridge between an ethic of fairness (justice) and an ethic of care in destination development and marketing, facilitating sustainability as well as well-being” (p. 27).

Finally, this framework paper discusses the methodological consideration that inform the research project. Critical realism is open-ended regarding methodology and method (Carter and New 2005). As summarised above, the key areas of inquiry of this dissertation include how to design and implement effective processes for developing appropriate STIs, how to identify and overcome impediments to resilience-building, how to develop pathways for cooperation and awareness creation, and how the perceptions, motivations, and abilities of tourism actors participating in assessments can contribute to indicator development and resilience-building. In developing new approaches for assessing resilience and sustainability, this dissertation recognises the aforementioned ontological, epistemological, and axiological concerns in tourism research and heeds calls for new methodologies that include toolkits capable of addressing the “ever-dynamic, ever-flowing nature of tourism” (Pernecky 2023, p. 559). The proposed alternative approaches emphasise the role of agents and structure alike, i.e. the roles both of tourism actors and the tourism system as a whole (Grix 2002). Article 1 and 4 draw on rich datasets generated through case study research. Notably, Article 2 makes use of a Delphi survey; and while this may not seem a typical method for critical inquiry, the novelty of this research design consists in it being the first survey to bring academics, policymakers and supporters of participatory-decision making to one table in an effort to encourage consensus among these survey participants. The aim here is to provide empirical evidence that community participation in STI development is not a matter of ‘wishful thinking’ but a valid and legitimate approach for SA that has found support among all stakeholder groups, including previously marginalised groups.

Article 3 differs from the rest of the body of work in this dissertation in being a conceptual paper positioned in the subjectivist/interpretivist research paradigm. This article understands the concept of resilience as constructed rather than discovered, with inconsistent and ‘fuzzy’ meanings attached to this term and its application in tourism research (Crotty 1998; Xin et al. 2013). The article seeks to select background literature connected to the central argument to enhance conceptual understanding with the concept of resilience itself being the object of research (Kirillova and Yang 2022; Xin et al. 2013). As such, Article 3 forms the baseline for further inquiry with the proposed methodology in Article 4.

2.2 Situating the dissertation in the research context

The overall status of tourism studies as a discipline remains contested. In line with Tribe's (1997, p. 639) famous designation of tourism as an "indiscipline", tourism research has a history of crossing disciplinary boundaries and has developed as an interdisciplinary and multidisciplinary field strongly influenced by economics, sociology, psychology, geography, and environmental studies (Correia and Kozak 2022). Clearly situating this dissertation in the overall debate in the field of tourism proves to be difficult as the research is informed by theories and approaches from a variety of disciplines. Nonetheless, articles 1 and 2 can clearly be positioned in the research area of sustainable tourism, specifically in the strand of sustainability assessment. This research area often applies principles from environmental research and indicator science. At the same time, the development of STIs is also often discussed in the domain of public participation science and governance research. Articles 3 and 4 are conceptually based on research on socioecological systems (SES) and disaster risk reduction (DRR), innovatively merging concepts from these two fields in which resilience is studied. Article 4 also introduces transdisciplinary research methods and elements from public participation research.

Generally, the overall frame for the topic of assessment is strongly connected to global and subordinate concepts of sustainability and resilience, that serve a guiding function in global frameworks such as the Agenda 2030 for Sustainable Development (UN 2015), the Paris Agreement within the United Nations Framework Convention on Climate Change (UNFCCC 2015) or the Sendai Framework for Disaster Risk Reduction (UNDRR 2015). These efforts to establish broader normative guidance could aid in creating a shared foundation for determining the desired trajectory of change (Loehr and Becken 2023). Since SDGs leave much room for interpretation, it is all the more crucial to endeavour to render them more operational through indicators and to align national targets with local delivery programs to ensure policy coherence (Biermann et al. 2017; Stafford-Smith et al. 2017).

3 Conceptual framework

3.1 The role of resilience in the transition towards sustainability

The increasing frequency and magnitude of disasters induced by natural hazards in recent years underscores the imperative of addressing risk in sustainable development. Comprehensively considering and integrating risk management and governance of existing and emerging risks in decision-making processes is crucial to strengthen sustainable development (GIDRM n.y; Opitz-Stapleton et al. 2019). Accordingly, the concepts of sustainability and resilience are unpacked below to provide clarity about the contexts in which they are used and to map out their characteristics.

While both concepts are intricately connected, share numerous traits and even mutually reinforce one another, resilience and sustainability are only related and not identical, let alone interchangeable (Hall et al. 2017; Saarinen and Gill 2019). Their conceptual proximity and the only subtle distinctions in their definitions can pose challenges in differentiating between them (Hall 2019; Lew et al. 2016). Researchers have attempted to draw distinctions between the two concepts, not always leading to consensus. Some scholars (e.g. McCool et al. 2013) state that sustainable tourism builds or maintains resilience whereas others (e.g. Espiner et al. 2017) argue that resilience is a necessary part of sustainability but not a sufficient one. The latter view is supported by scholars who see resilience as a dimension of sustainability (Dredge 2019) and claim that sustainability is only attainable in sufficiently resilient SES (Ruiz-Ballesteros 2011). A detailed elaboration on the differences in spatial and temporal scale and ontological assumptions underpinning sustainability and resilience can be found in Article 4 of this dissertation. On a fundamental note, sustainable tourism is defined as „tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities” (UNEP 2005). This definition is grounded in the fundamental premise that growth has limits, i.e. the recognition that ecological, economic, and social resources are finite and must be ‘used wisely’ or conserved. Saarinen and Gill (2019) describe sustainable development as “highly ideological and normative” and remark that the notion is based on long-term commitment making it a more holistic and inter-generational concept (p. 23).

On the other hand, the widely acknowledged definition of resilience in the context of social systems research describes resilience as “the ability of individuals, households, communities, cities, institutions, systems and societies to prevent, resist, absorb, adapt, respond and recover positively, efficiently and effectively when faced with a wide range of risks, while maintaining an acceptable level of functioning and without compromising long-term prospects for sustainable development, peace and security, human rights and well-being for all” (United

Nations 2020; United Nations Habitat 2021; cf. DKKV & Futouris 2022). Resilience rather operates on a local scale and conceptually emphasises unexpectedness, adaptation to change and highly dynamic environments (Lew et al. 2016; Reyers et al. 2022). This definition further highlights the interconnectedness of resilience, risk and sustainable development, promoting an understanding that coping with risk is a necessary requirement for resilience and that building resilience is a prerequisite for achieving sustainable development (Eckert and Posch n.y.).

3.2 General considerations about assessments

This section outlines how ‘assessment’ is understood and employed as a key concept in this dissertation, further discussing the aims of assessments and the benefits they set out to deliver. Sustainability is a highly complex and multidimensional concept that can be heavily influenced by political agendas, subjective perceptions and the relativity of time. It is consequently well elaborated that the assessment of sustainability remains a challenging endeavour (Balas and Abson 2022). A sustainability assessment can yield substantial benefit if they are conducted in the form of a well-structured process that addresses the complexity inherent to its concept by either describing the sustainability state of a current situation or by predicting potential effects prior to implementation (Pope et al. 2004; Ramos 2019). Based on the work of Balas and Abson (2022), Diéguez-Castrillón et al. (2021), Miller and Twining-Ward (2005), Miller and Torres-Delgado (2023), Pope et al. (2004), Quinlan et al. (2016), Reed et al. (2006), (Diéguez-Castrillón et al. 2021), UNWTO (2020), UNWTO (2023) and Waas et al. (2014) a sustainability assessment aims to:

- Structure complex information
- Facilitate a better understanding and provide meaning to the abstract and normative concept of sustainability
- Stimulate learning about economic, social and environmental interrelations
- Provide simplified and aggregated information and context to guide evidence-based decision-making
- Enable sustainability goal-setting and strategy development
- Monitor progress towards defined goals and allow for benchmarking

In a tourism context, a variety of tools to assess the sustainability of tourism have been proposed such as benchmarking tools (Cernat and Gourdon 2012), (product) life cycle assessment (Castellani and Sala 2012; Filimonau 2016; Singh et al. 2009), environmental auditing (Schianetz et al. 2007), ecological footprint assessment (Castellani and Sala 2012; Singh et al. 2009) or the use of indicator systems (Choi and Sirakaya 2006; Lee and Hsieh 2016; Lozano-Oyola et al. 2012; Rasoolimanesh et al. 2020; Singh et al. 2009). Among these, sustainable tourism indicators (STIs) have become the most widely accepted and adopted tool for assessing sustainability in a tourism context (Balas and Abson 2022; Crabtree and Bayfield 1998; Font et al. 2021; Rasoolimanesh et al. 2020; Roberts and Tribe 2008; Torres-Delgado

and Saarinen 2014). This is why STIs also serve as the baseline for the sustainability assessments conducted as part of this dissertation.

Regarding terminology, the conscious decision was made to speak of ‘assessment’ rather than ‘measurement’ within the scope of this dissertation. Both in sustainability research and specifically in resilience research, measurement is considered to refer to numeric values and the employment of quantitative measures (Quinlan et al. 2016). This practice is criticised for neglecting dynamic and process-oriented approaches and shifting the focus back to “assets and capital” (Reyers et al. 2022, p. 659). Moreover, based on the epistemological association of ‘indicators’ with empiricism and positivism, STIs tend to be mistaken for quantitative measures, overlooking the fact that many different socio-economic aspects are not susceptible to measurement (Wong 2006).

Lastly, it is crucial to differentiate between ‘bottom-up’ and ‘top-down’ approaches to assessing the sustainability of tourism and the different meanings attributed to these terms in this context. As elucidated in Article 2, ‘top-down’ here refers to the assessment of sustainability based on statistical derivation from national Systems of Environmental Economic Auditing (SEEA) within System of National Accounts (SNA), while ‘bottom-up’ denotes the employment of regional and local approaches. The research conducted as part of this dissertation is focused on a bottom-up approach. Closely related to this distinction are considerations about the scale or unit of assessment, as elaborated in the following section.

3.3 Considerations about the scale of assessment

Despite the global nature of the SDGs, they are not fit for universal application but must first be broken down to render them operational at smaller scales (Biermann et al. 2017). Tourism is a strongly territory-contingent industry in which visitor flows are spread unevenly across national, regional and local scales. Sub-national territorial entities thus need to be defined to enable effective sustainability assessment. Reflecting this approach, the majority of sustainability assessments in a tourism context are conducted at local or regional scale (Balas and Abson 2022). This scale proves most expedient for three main reasons: 1) The characteristics as well as the tourism density and intensity can be very different between geographical scales, 2) destination management action usually takes place at regional / local scale and if there is a destination management organisation in place, their strategic realm mainly encompasses this territorial entity, 3) the interaction between the economic, environmental and social scale become most evident at local scale. Examples of major variations in characteristics include differences in the prevailing attitudes of host communities, employment opportunities, traffic density, price levels, seasonal patterns, etc. This is why analysing and addressing connections between the dimensions of sustainability is best described at relatively small geographical scales (UNWTO 2023). Consistent with this

reasoning, this dissertation takes 'tourism destination' as the unit of analysis for assessing sustainability and resilience.

Article 3 provides conceptual clarification of 'tourism destination' as the unit of analysis, further relating the conceptualisation of tourism destinations as 'systems' to the broader context of resilience thinking. Despite being focused primarily on sustainability assessment at subnational level, this dissertation also elaborates a variety of corresponding tactics for addressing the issues around sustainability assessment to ensure consistency with relevant national and international policy aims. More specifically, Article 1 considers the challenges associated with the global-local nexus in assessment, as well as the topics of geographic specificity and data comparability, while Article 2 outlines methodologies of indicator-development that reconcile the need for international alignment with the need for local relevance.

4 Structured synthesis of research contributions

Given the multifaceted nature of sustainability and resilience assessment, the overarching research question of this dissertation cannot be answered straightforwardly, hence each of the four articles comprising this cumulative dissertation examines individual aspects of the question, applying different methods to shed light on the topic from various conceptual angles:

1. **Eckert, E. & Hartmann, R.** (2020): Measuring sustainability in tourism destinations: Adaptation of indicator sets to local conditions illustrated by the example of Windhoek, Namibia, *Journal of Tourism Science*, Vol. 12, No. 3, pp. 370-390
2. **Eckert, E.** (2022): Reconciling scientific, political and participatory perspectives on sustainable tourism indicator development for destination sustainability assessment, *Tourism Planning & Development*
3. **Posch, E.; Eckert, E. & Thiebes, B.** (n.y.): Towards a future conceptualisation of destination resilience: Exploring the role of actors, agency and resilience narratives [accepted for publication in the *Journal of Tourism Futures*]
4. **Eckert, E. & Posch, E.** (n.y.): From Global Frameworks to Local Meanings: Building Resilience for Sustainable Destinations, in Pillmayer, M.; Hansen, M.; Karl, M. (Eds.), *Tourism destination development: A geographic perspective on destination management and tourist demand*, De Gruyter, Oldenbourg, Germany [accepted for publication]¹

Up to this point in this framework paper, the topic of assessment and how it is addressed in this dissertation has been discussed in quite general terms, introducing a variety of conflicts inherent to the topic. The following sections summarise how the dissertation explores these complexities article by article covering the aspects of the topic as indicated in the very title of this dissertation: ‘Assessing Sustainability and Resilience in Tourism Destinations: Approaches for the Development and Implementation of Destination Sustainability and Resilience Assessment Methodologies’.

Table 1: Structure of articles within the dissertation project

	Article 1	Article 2	Article 3	Article 4
Approaches for the development of destination sustainability and resilience assessment	x	x	x	x
Approaches for implementation of destination sustainability and resilience assessment	x	x		x
Destination sustainability assessment methodologies	x	x		
Destination resilience assessment methodologies			x	x

Offering different focal points, the four separate but interlinked contributions advance theory, methods and knowledge across sustainability and resilience conceptualisation as well as their assessment and operationalisation. A common denominator of all the articles is a shared process orientation and focus on the idea of participation and destination-specific approaches.

¹ Despite this title being a book chapter, it is referred to as ‘Article 4’ in this framework paper to allow for easier reading. Its publication nature as a book chapter is hereby acknowledged.

4.1 Article 1: Measuring sustainability in tourism destinations - Adaptation of existing sustainability indicator sets to local conditions

Introduction

Article 1 addresses the central yet unexplored issue of indicator adaptation in the context of destination sustainability assessment. In challenging the assumption that SAs require globally applicable indicators regardless of the specific destination context being assessed, the article lays the ground for a new understanding of approaches in sustainability certification and destination management.

Despite the large volume of scientific literature already accumulated on approaches for measuring sustainable tourism and the number of certification businesses that have developed catalogues for destination certification, there remains a paucity of research on how existing STIs can be adapted to local circumstances. While prior studies have highlighted disparities and deficiencies in current indicators and pointed out the inadequacy of endeavouring to assess tourism sustainability without first addressing the global-local dilemma (Pérez et al. 2013), this dilemma is only rarely treated as a central issue in extant studies, and most only in the context of North-South power dynamics and governance mechanisms. The majority of current sustainability certification and assessment initiatives apply a fixed set of criteria and generic indicators that assess the performance of a destination or tourism business based the four dimensions of sustainability. Since many of these initiatives relate to global contexts, however, they are often too general for practical application (Lew et al. 2016).

At present most certification initiatives apply the same indicators to every destination under study, with only some allowing for the omission of certain indicators by marking them as 'non applicable'. This practice of universally applying the same indicators can be problematic as it can lead to important local issues being overlooked, i.e. not identified or assessed, leading to scientifically weak assessments with little operational use. The persistence of this practice is all the more surprising given that it is almost 20 years now since Twining-Ward and Butler (2002) stressed that context is key when designing STIs and that it should never be assumed that issues are the same across different destinations. Yet while scholars have recognised the need to design flexible STIs, research into the practical adaptation of these indicators to a multitude of spatial scales and types of destinations is still rare and mostly limited to site-specific case studies (Cernat and Gourdon 2012; Laws et al. 2003; Niavis et al. 2019; Rasoolimanesh et al. 2020). Although calls have lately been growing for the use and adjustment of site-specific and customised STIs (Huovila et al. 2019; Ivars-Baidal et al. 2021; Lesar et al. 2020; Weber et al. 2019), progress on developing a procedure for the adaptation of existing STIs to local circumstances has been slow. Based on these preliminary considerations, Article 1 sets out to answer the following research questions:

RQ1 How can the local circumstances and idiosyncrasies of a destination be identified and incorporated in SA procedures?

RQ2 What opportunities and challenges form part of the STI adaptation process?

RQ3 How can the divide between global comparability and local relevance be bridged?

Research Design: Case Study

Article 1 is based on the results and experiences of a case study conducted in Windhoek, the capital of Namibia. A single-case study design was adopted as the most apt approach for capturing, understanding, and elucidating the adaptation of STIs to local conditions. Consistent with this approach, the study draws on a multitude of data sources (Eisenhardt and Graebner 2007; Locke and Golden-Biddle 2004; Yin 1994). Figure 1 details the research process.

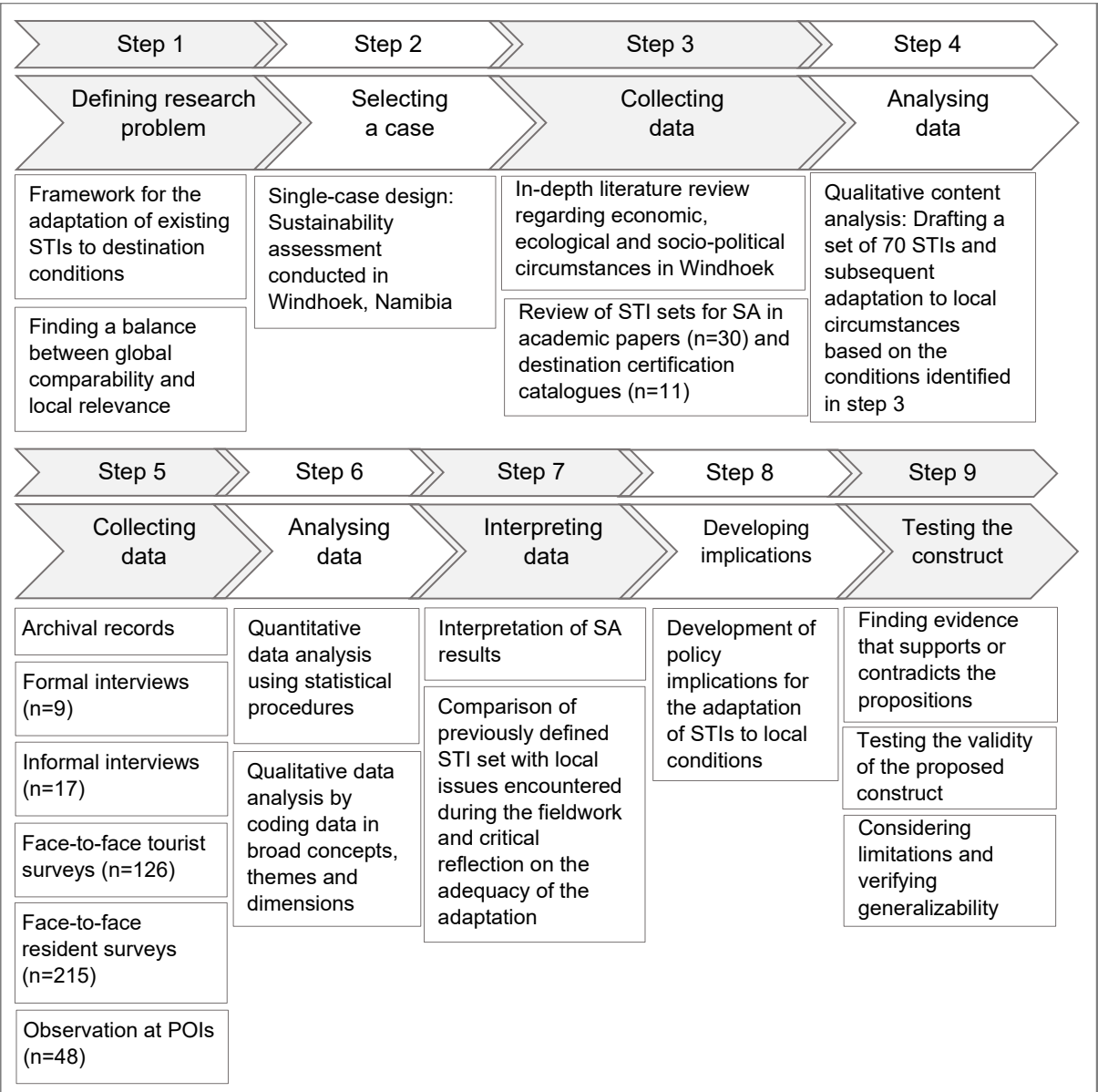


Figure 1: Research design (Source: Own figure based on Eisenhardt 1989; Firestone 1993; Reihlen 2021; Yin 2003)

Based on a development cooperation agreement between the City of Bremen and the City of Windhoek the authors were tasked with a sustainability assessment conducted for a baseline study on sustainable tourism to inform the development of the *Targeted Windhoek Tourism Development Strategy* commissioned by the tourism department from the City of Windhoek. Windhoek is a particularly suitable environment for studying the phenomena under investigation as it does not possess the typical characteristics of a tourism destination. This research context affords valuable opportunities for gaining insights into the issue under study insofar as any mechanisms that deviate from prevailing understandings of destinations in the literature are more easily observable and rendered visible (Eisenhardt 1989; Flyvbjerg 2006; Locke and Golden-Biddle 2004).

The research underlying Article 1 adopted a structured approach employing a mix of quantitative and qualitative methods. Including data from a combination of archival sources, formal and informal interviews, surveys of tourists and residents and observations (Figure 1). Prior to the field trip, a set of STI set was developed and adapted to the local conditions based on a systematic literature review and in dialogue with the responsible officials from Windhoek. In a first step, academic papers and destination certification catalogues were reviewed to collect a multitude of potential STIs. Based on recommendations proposed by Castellani and Sala (2010), Önder et al. (2017) and Tudorache et al. (2017) for how best to identify locally relevant issues and critical topics in a tourism destination, an in-depth literature review was conducted covering the economic, social, environmental, historic and political issues specific to Windhoek. The data were analysed by content analysis, resulting in the identification of four structural deviations: 1) high levels of social inequality; 2) historically evolved ownership structures due to colonisation and apartheid; 3) extreme climatic conditions/scarcity of water; and 4) limited infrastructural development. Following this literature review a set of 70 STIs was drafted and subsequently adapted to the local circumstances in Windhoek based on the conditions identified (cf. Eckert 2020). To counterbalance any tendency to bias on the part of the researchers a strict dual-control principle was applied in the process of selecting the set of indicators, with both authors individually verifying the suitability, relevance, wording and ratio of the STIs. The three main methods used in the sustainability assessment on site were expert interviews with key tourism stakeholders, tourist and resident surveys and observation at tourism-relevant sites. The data were collected during a field trip to Windhoek in September 2019. Nine formal interviews with stakeholders from the Windhoek tourism department, tourism office, environmental department, transport department, sustainability certification bodies, tourism association representatives, tourism lecturers and tourism consultants were carried out. In addition to that, another eleven interviews with hotels and restaurants and six interviews with tourist attractions were conducted. Each interview was based on a structured interview guideline with partly close-ended multiple choice questions or open-ended questions.

Another instrument of data collection were tourist and resident surveys. The surveys for each respondent group were carried out based on respective questionnaires that had been set up before the field trip. Participants from the tourist sample were either individual travellers or travellers that formed part of a group tour. Overall, a balanced cross-section of gender, origin and age was considered when approaching pedestrians. The questions were posed in face-to-face interviews by the author team and by tourism students from the Namibia University of Science and Technology. All interviews were conducted in English or German using the same guideline. Across the city, a total of eleven interview locations were selected. A total of 126 tourists and 215 residents took part in the surveys. Lastly, non-participant observations were used to collect data for the sustainability assessment. Before the field trip, standardised observation checklists had been developed that were then applied at 48 touristic points of interest such as points of visitor entry, tourist information, tourist attractions as well as hotels and restaurants. The data were recorded using checklists with check boxes with the observed data recorded directly on site to minimise difficulties with memorisation or selective perception. Increasing the degree of objectivity for the observations was attempted by using a clear and universal scheme and by guaranteeing that every observation was conducted by the same researcher from the team. Exemplary excerpts from the interview guidelines, surveys and observation checklists can be found in Annex 1.

After the fieldtrip, the collected data were analysed using qualitative content analysis and statistical procedures. Since the focus of Article 1 is not specifically on the sustainability assessment conducted for Windhoek but on the adaptation of the assessment methodology to local conditions, the data collection and analysis are not further elaborated in this framework paper. A clear description of the data analysis process for the sustainability assessment can be retrieved from Eckert (2020).

In order to verify the previously defined STI set and critically reflect on the adequacy of the adaptation process the data were then analysed a second time at metalevel. The central aim of this second analysis was to find out what went well during the adaptation process and the assessment and to find out what needs to be considered for future STI adaption processes. The data were coded in broad concepts, that were later narrowed down to content themes from which aggregate dimensions were ultimately derived (cf. Gioia et al. 2013). Secondary data, empirical data from the SA and fieldnotes were analysed by means of comparison to identify overlapping content themes in the data. A clear display of this analysis process can be found in Figure 2.

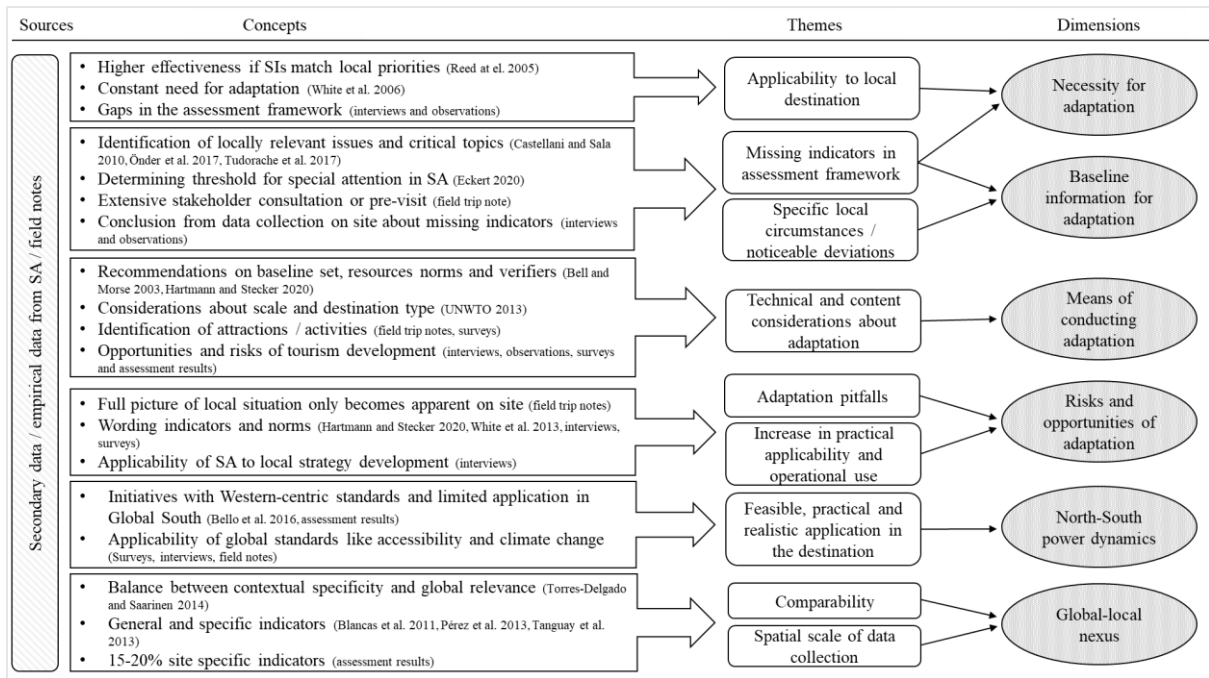


Figure 2: Identification of aggregate dimensions (Source: Own figure based on Gioia et al. 2013)

First level concepts related to attention points from the literature, observations or comments from the empirical data and considerations from the researcher team that were recorded in the fieldnotes. From these concepts second level themes could be derived that were then ultimately narrowed down to the following six dimensions:

- 1) Necessity for adaptation
- 2) Baseline information for adaptation
- 3) Means of conducting adaptation
- 4) Risks and opportunities of adaptation
- 5) North-South power dynamics
- 6) Global-local nexus

To exemplify the process of coding and the baseline for the resultant conclusions one example will now be explained in more detail. Despite the extensive secondary research before the field trip some aspects only became apparent to the researchers in their full consequence on site. The influence of the rigid owner structure of tourism businesses and its decisiveness for the distribution of revenue from tourism throughout the city only became apparent during the interviews and surveys on site. This observation clearly showed that applicability to local destination circumstances is imperative for the development of a useful assessment with a high operational use which in turn led to the development of the dimension “Necessity of adaptation”. These considerations in turn are directly reflected in the steps T3, T5, T7, C3 and C4 of the framework proposed in article 1.

Results and discussion

In this study, propositions for future adaptation processes were developed based on the identified dimensions, indicator comparison and the critical reflection of the adaptation process. These findings provided the basis for the creation of a first table of ‘technical considerations’ for the set-up of indicator sets and a second table focusing on the content of the indicator set (see Table 1 and 2 in Article 1). The close linkage to the data from Windhoek meant each step in the STI development process could be substantiated with site-specific examples, thereby increasing their practical applicability.

Regarding the opportunities of STI adaptation, it became clear that if it had not been for the adaptation of the STI set, important aspects such as tourist safety, the reflection of Namibian culture in tourism assets and attractions, events focused on local traditions and culture, residents’ perception of the representation of their own cultural heritage and sources of water supply would not have been addressed in the SA. These findings align with and support the emphasis placed by Bello et al. (2016) and Torres-Delgado and Saarinen (2014), on the need for STI adaptation to reflect the fact that tourism destinations are diverse and confronted with individual challenges that must form part of SAs.

Regarding the risks involved in adaptation, the analysis and evaluation conducted for this study showed that some STIs which should have formed part of the assessment were omitted and that the consequentiality of these omitted indicators only became apparent to the researchers once they were on site. In particular, the desktop research had not sufficed to attain a clear picture of the rigid ownership structure in Windhoek, the deficits in digitalisation, the development of Windhoek and Katutura as a single city, the problems with township tourism, and the extent of climate and infrastructure problems (Eckert 2020). The theoretical propositions developed in this article provide the basis for recommended strategies to avoid such shortcomings in future assessments, including the need to undertake extensive stakeholder consultation as a key component for indicator development *before* entering the field. This point is subsequently picked up in Article 2 of this dissertation, which proposes and discusses hybrid methodologies aimed at harnessing the potential benefits of involving local community members in indicator development to counteract top-down practices. Another risk associated with adaptation is the possibility of neglecting global standards due to the emphasis being less on global comparability but more on what is feasible, practical and realistic in the destination. The four techniques proposed by Bell and Morse (2003) for establishing an indicator reference condition address this issue and can be applied to reduce the risk of failing to take due account of global standards.

In line with similar approaches proposed in the relevant literature (Blancas et al. 2011; Pérez et al. 2013; Saarinen 2014), Article 1 proposes a number of strategies for bridging the global-

local divide. These include the proposal that the selection of indicators should be consistently oriented towards the specific problem, since a simultaneous consideration of globally and regionally relevant problems cannot always be tackled with the same set of indicators. A set of 70 indicators was selected for the study on which this article is based with 15-20% of these indicators being site-specific and the rest being generally applicable to tourism destinations.

A number of “case study tactics” as proposed by Yin (2003) were applied to strengthen the validity of this study (Table 2).

Table 2: Four tests to verify the quality of empirical social research (Own table based on Yin 2003)

Test	Case Study Tactic
Construct validity	<ul style="list-style-type: none"> • Triangulation: use of multiple sources of evidence (archival sources, interviews, surveys and observation) (Maxwell 2009; Yin 2003) • Thorough collection of rich data (Maxwell 2009) • Engagement of multiple investigators to enhance confidence in the findings (Eisenhardt 1989)
Internal validity	<ul style="list-style-type: none"> • Clear description of data analysis and clear explanation-building (Yin 2003) • Clear process of coding and identification of dimensions • Rating of indicators according to dual-control principle
External validity	<ul style="list-style-type: none"> • Consultation of theory in single-case studies (Yin 2003) • Comparing and contrasting results with current literature (Walton 1992) • Ensuring analytical generalisability of the findings (Yin 2003)
Reliability	<ul style="list-style-type: none"> • Extensive documentation of data collection and analysis procedures (Yin 2003)

As a limitation of the study, it must be acknowledged that the field research period was quite short taking place within one single month, which could have led to a distorted depiction of the touristic situation in Windhoek that failed to represent how this situation changes throughout the entire year. To assess sustainable development processes in the destination more thoroughly, the investigation would have needed to be conducted multiple times over an extended period. It should also be noted in this regard that multiple cases always create more robust constructs, providing firmer grounding in empirical evidence for the formulation of theoretical propositions (Eisenhardt and Graebner 2007). Replicating the procedure in another destination in accordance with the detailed methodological framework presented in this article could help strengthen the proposed theoretical framework. Importantly, case studies like the one presented here “are generalisable to theoretical propositions and not to populations or universes” (Yin 2003, p. 10). The case study does not represent a sampling unit but serves as a baseline to expand and generalise theories rather than enumerating frequencies (Yin 2003). The study is therefore analytically generalisable insofar as the proposed propositions are likely

to hold across a variety of destinations that do not correspond to any generic definition of a destination (Firestone 1993). Moreover, the concrete and practical findings illustrated by the examples of application in Table 1 and 2 with propositions in the article can be valuable for future inquiry in this area.

Conclusion

Article 1 set out to develop a framework facilitating the integration of the contextual features of a tourism destination when conducting SAs. The authors argue that imposing a one-size-fits-all approach to a variety of destinations inevitably results in inconclusive assessments that disregard certain key characteristics of the destination. The choice of indicators should therefore rather be based on considerations of feasibility rather than on the conviction that a certain standard has proven useful in other contexts. Another central finding of this article is that numerous aspects which exert a significant influence on sustainable tourism development would have been overlooked if it had not been for the adaptation of the STI set.

This finding underlines the severity of the consequences of non-adaptation to local context, demonstrating how imposing a one-size-fits-all approach across a variety of destinations is neither appropriate nor expedient. The techniques proposed in this article for identifying locally relevant issues and critical topics serve as a useful first step for any type of strategic planning and reorientation. Consistent with the highly practical approach adopted in this article, the proposed refinements of the assessment methodology are deliberately designed so as to be simple to apply in practice. Following these steps will not only support the implementation of a sound SA but also encourage strategic planning, raise awareness of sustainable tourism, and build the capacities of local communities. And while this article shows there is no single threshold at which global challenges turn into local issues, applying the proposed techniques can maintain a degree of international comparability while accounting for local circumstances. As with the degree of adaptation, the final STI set will depend on the purpose and context of the assessment.

4.2 Article 2: Indicator development for destination sustainability assessment: Scientific, political and participatory perspectives on decision-making

Introduction

The first article of this dissertation demonstrated that the adaptation of STIs to local circumstances proves to be a useful practice for integrating destination-specific conditions into an SA. However, the adaptation process itself needs to be guided by a defined group of people raising the fundamental question of who decides which indicators to use for an SA. Accordingly, Article 2 takes a closer look at advancements in the process of indicator development and selection.

A prevalent debate in recent research on assessments centres on the divide between developing a set of indicators which is scientifically sound and in line with political policy on one hand while also considering local context (Laimer 2017; Reed et al. 2006). This debate is often held on the basis of approaches proposed by three key parties: scientists, policymakers, and supporters of participatory decision-making. As has been repeatedly emphasised by scholars and is reiterated in this dissertation, public participation and inclusive stakeholder involvement is fundamental for effective sustainability assessment (Kristjánsdóttir et al. 2018; Miller and Torres-Delgado 2023; Sinclair et al. 2015). Recognition of this imperative has led scholars to propose a number of frameworks with a particular focus on participatory approaches for STI development (Islam et al. 2021; Lupoli et al. 2015; Parkins et al. 2001; Reed et al. 2006; Waligo et al. 2013). However, only a few studies to date have focused on the trade-offs involved in choosing between the priorities of scientific, political and community approaches to assessment, while even less attention has been paid to the broader methodological and conceptual foundations of STI development.

To address this research gap, Article 2 first structures the current multi-disciplinary debate through a literature review to understand how to adequately conceptualise STI development processes using hybrid methodologies. Here the term ‘hybrid methodology’ is used to describe approaches to indicator development that facilitate the inclusion not only of policymakers and researchers but also the meaningful involvement of non-expert groups to enable the consideration of diverse standpoints as a basis for more comprehensive and locally relevant assessment (Reed et al. 2006; Schianetz and Kavanagh 2008; Thomas and Twyman 2004). The article proposes and demonstrates the use of a Delphi survey to help bridge the divide between the standpoints of actors involved in STI development by bringing academics, policymakers, and supporters of community involvement together at one table. The results of this survey are then drawn on to formulate proposals for aiding the development of more inclusive and participatory formats and methodologies.

Current state of research

The review of the current literature undertaken in this article indicates several gaps and contradictions in prevailing approaches to STI development. However, the review also shows that a number of studies have attempted to meet the requirements proposed by all three parties, with some specifically focused on exploring methods of STI *development* (Asmelash and Kumar 2019; Choi and Sirakaya 2006; Cloquell-Ballester et al. 2006; Parkins et al. 2001; Reed et al. 2006; Reihanian et al. 2015; Torres-Delgado and Palomeque 2014). To provide the reader with a better understanding, Article 2 introduces the main arguments brought forward in top-down and bottom-up indicator development schemes and extensively reviews stakeholder participation in tourism and requirements for community participation. Central findings from this literature review are that participants' motivation, opportunity and ability to participate act as a moderator for the implementation of a strong SA carried out as part of result of a collaborative STI development process. The article lays out the advantages and disadvantages of such inclusive processes, and the criticisms voiced by each of the three parties in previous applications of participatory assessment practices in the literature (Table 1, Article 2), which forms the baseline for the Delphi survey that is subsequently conducted.

Method

Unlike classic decision-making tools, the Delphi method is often used when there is no 'right' or 'wrong' answer to a question but instead consensus of opinion is sought, as the basis for facilitating the development of potential solutions (Kaynak and Macaulay 1984; Miller 2001). The main aim of this type of survey is thus to achieve the highest possible degree of consistency among participants' responses and to legitimise the judgments thereby obtained on the basis of the lowest possible dispersion of responses (Häder 2014). The method consists in repeatedly collecting opinions of a clearly identifiable group of experts in order to diversify, enrich and improve the collective understanding of a problem (Häder 2014; Richey et al. 1985; Torres-Delgado and Palomeque 2014). The results can then be used to draw conclusions for necessary interventions, including in response to problems identified in the survey, as well as to raise awareness about any undesirable development flagged up by the survey participants (Häder 2014). Figure 3 illustrates the process of the Delphi survey conducted as part of Article 2. Table 3 depicts the survey metrics from Delphi survey round 1 and 2.

Table 3: Metrics of the Delphi survey

Round	Contacted	Participants	Valid responses	Response rate	Dropout rate	Duration
1	96	42	38	43,8%	9,5%	20 days
2	38	32	30	84,2%	6%	38 days

The results obtained from the two survey rounds were statistically analysed using SPSS® Statistics, with responses to open-ended questions structurally elaborated using MAXQDA qualitative data analysis software. These open-ended questions in particular provided very detailed contributions that significantly aided the process of finding consensual solutions.

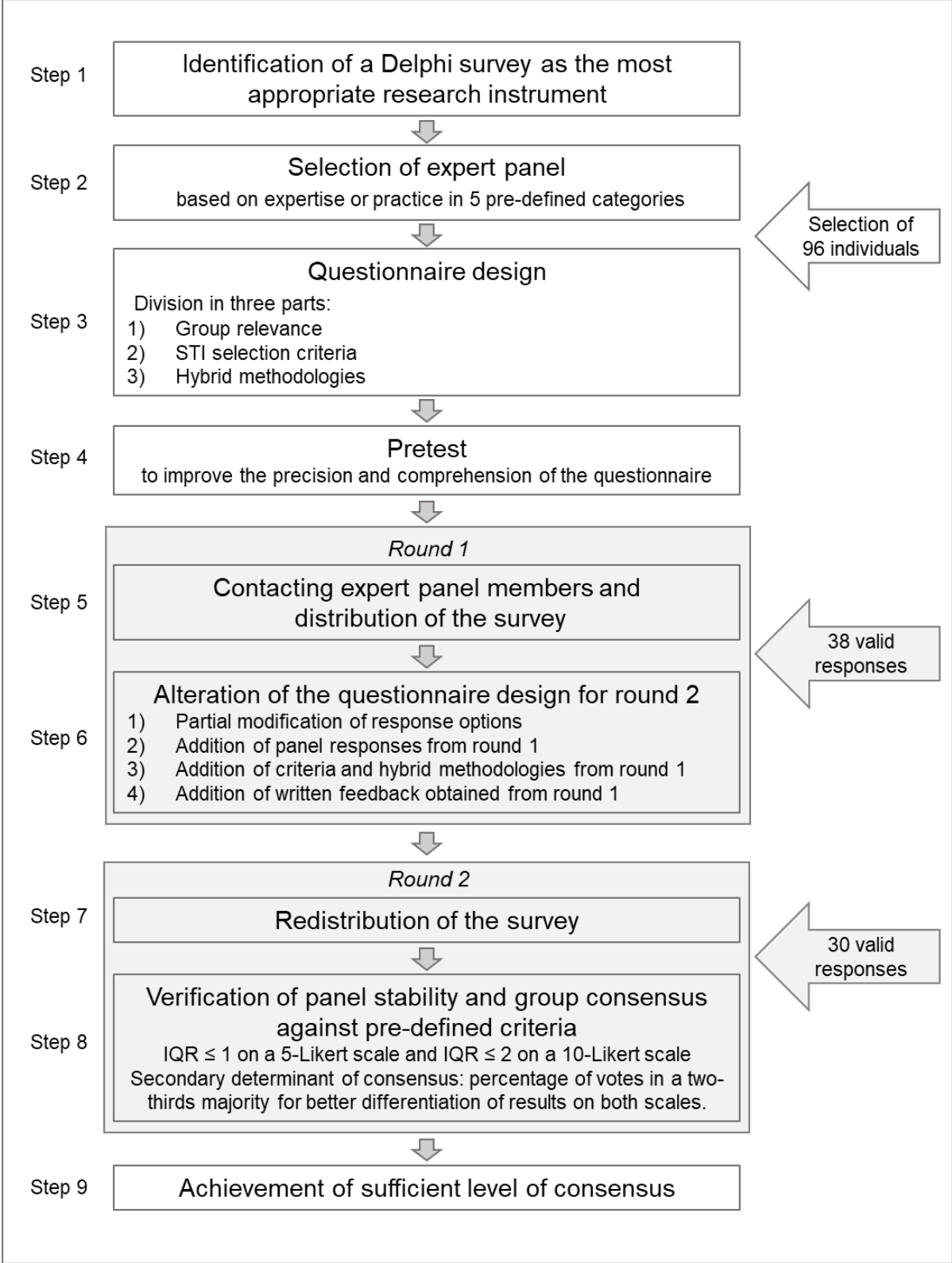
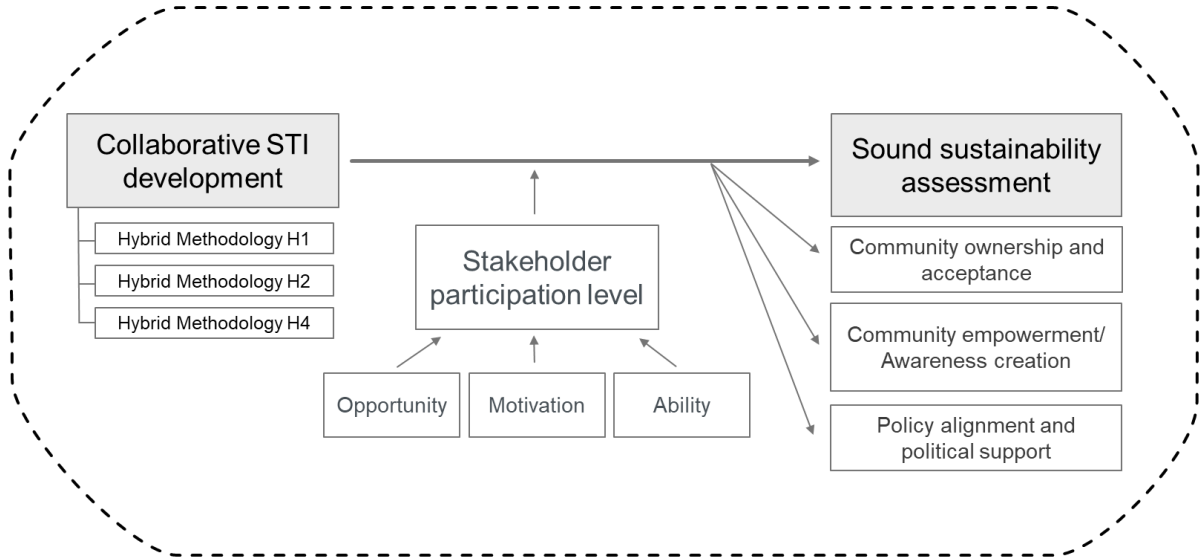


Figure 3: Delphi survey process (Source: Own figure)

Results and discussion

While the literature review in this article provided a detailed overview of the advantages and disadvantages of bottom-up and top-down approaches and of the prerequisites for effective stakeholder participation, the primary objectives of the subsequent empirical analysis was to obtain insights into the group relevance of members in an STI development committee and selection criteria as well as to identify potential hybrid solutions for facilitating future STI development. The Delphi survey results revealed a prevailing consensus on the need to represent all three interest groups (i.e. academics, policymakers and proponents of more participatory approaches) within the STI development process. Regarding selection criteria for STIs, the criteria ‘relevance’, ‘comprehensibility’ and ‘local context’ ranked highest. Notably, criteria specifically related to the scientific requirements of the assessment only appeared in the mid-range of the ranking. Concerning the hybrid methodologies, the highest ranking was assigned to methods assessing community participation through indicators themselves (e.g. “Residents’ satisfaction with their involvement and influence in tourism development” (European Commission 2016) or “Host community’s access to decision-making and information” (Rasoolimanesh et al. 2020)) and in participatory community workshops followed by scientific validation. Overall, the results of the study underline that the divide between developing a set of indicators which is scientifically sound and in line with political policy while considering local context and community perspectives can be bridged and even exceed the mere value of the assessment (Figure 4).

Conceptual assumption: Bottom-up managerial perspective



Contextual assumption: Destination sustainability

Figure 4: Modelling a theoretical proposition (Source: Own figure based on Whetten 2009)

The validity of the survey results was strengthened in three main ways: by conducting a pre-test, by the verified selection of experts based on recognised identification methods (Mauksch et al. 2020), and by the quality and stability of the panel (i.e. 84.2% answered both rounds).

Moreover, allowing little time in between rounds meant abundant and high-quality comments could be gathered from the experts, including suggestions and references to other participants' suggestions (Landeta 2006). Lastly, the high degree of consensus and overall convergence in opinion between rounds (Landeta 2006) paired with the procedural rigour of clear description of survey procedure and data analysis (Yin 2003) strengthen the validity of the proposed results.

Conclusion

Taken together, the findings of the study conducted for Article 2 confirm and support the proposition that collaborative processes of STI development not only fulfil but greatly exceed the conceptual purposes of an SA, suggesting that the participatory development of indicators not only leads to more comprehensive SAs but can also strengthen learning processes, create a sense of ownership, and generate constructive political conversations. Participants clearly favoured criteria on local destination circumstances, community perspectives and involvement over complex scientific terminology, accuracy and comparability. This prioritisation was also reflected in participants' preference of formats for hybrid methodologies that focus on participatory and innovative approaches, including those opening avenues of inquiry on transdisciplinary research.

In sum, based on the findings of the literature review and the empirical insights from the Delphi survey, Article 2 maps out a viable path for future STI development by outlining approaches, formats and tools. The article thus contributes to knowledge in the field of STI development in the following ways: 1) by restructuring the debate around STI development and facilitating a better understanding of the complexities inherent in the threefold trade-off between academics, policymakers and proponents of participatory approaches; 2) by bringing together representatives of all three parties to set a common direction for future STI development; and 3) by providing conceptual clarification of previously conducted hybrid approaches for STI development through a differentiated assessment of these approaches.

4.3 Article 3: Towards a future conceptualisation of destination resilience: exploring the role of actors, agency and resilience narratives

Introduction

Although resilience has been conceptualised and applied extensively in a variety of academic disciplines for over half a century now, the close link between sustainability and resilience has become much more visible in recent years in the context of increasing crises and system disturbances. The concept of resilience itself has concurrently gained far greater prominence in sustainability discourse, with the term becoming something of a buzzword especially since the outbreak of the COVID-19 pandemic. Although this widespread usage has led to and reflects a growing recognition of the importance of resilience and of incorporating the concept of risk in sustainable development endeavours, there remains little agreement on what exactly is implied by 'being resilient' in a tourism context and how resilience should be assessed. As Prayag (2018) has already noted some years ago, the fundamental issue of how resilience should be conceptualised, let alone measured, has become a controversial and much disputed subject among tourism scholars. It is precisely this lack of clarity regarding the concept of resilience within the assessment of sustainable tourism that sparked the interest and motivation for this research project. Article 3 sets out to resolve these ambiguities surrounding the concept of resilience in the tourism literature and to address the lack of established resilience assessment methodologies at destination level. For this purpose, it identifies and examines narratives in the literatures of studies across various scholarly disciplines that explore the conceptualisation and operationalisation of destination resilience. Employing a conceptual research approach, the article identifies and elaborates theoretical baselines and conceptual elements associated with resilience. These are subsequently combined and applied in the article to construct an innovative 'Destination Resilience Model'.

The concept of resilience has found application in various disciplines and academic fields, each characterised by distinct paradigms. This has contributed to diverse and sometimes mutually contradictory interpretations of the term. An examination of resilience research from a tourism standpoint reveals two research disciplines with particular relevance to *destination* resilience, namely research of social-ecological systems (SESs) and studies of disaster risk reduction (DRR), each of which conceptualises and applies the resilience concept quite differently. The origins, conceptualisation, and application of resilience within research on SES and DRR are summarised in the results section of this article summary. In the tourism context, research has predominantly focused on studying resilience within SESs (Amore et al. 2018; Biggs et al. 2012; Hall et al. 2023; Postma and Yeoman 2021; Prayag 2018; Ruiz-Ballesteros 2011) and various resilience models have been developed within this stream (Amore et al. 2018; Calgaro et al. 2014; Prayag 2023; Pyke et al. 2021). Given the diversity of interpretations

and applications of resilience in the literature, however, many studies lack a clear positioning of their concepts within the broader academic discourse on resilience.

Research Design

The third article within this dissertation employs a conceptual research approach. By selecting background literature based on its relevance to the main argument, a conceptual contribution aims to enhance understanding of the related concepts being explored (Kirillova and Yang 2022). Unlike a systematic review, which entails an exhaustive literature search based on pre-defined inclusion criteria, this approach thus prioritises suitability and relevance over comprehensiveness in selecting which studies to review. Accordingly, the researchers reviewed the origins, meanings and uses of the concept of destination resilience and analysed how these have evolved over time and within different contexts (Wallerstein 2009).

Doing so, the conceptualisation and operationalisation of resilience at destination level is analysed in Article 3 and patterns and themes that form the theoretical baseline for the identification of central concepts in the context of destination resilience are summarised. The article goes on to translate these conceptual elements into a Destination Resilience Model (visualised in Figure 5 below).

Results and Discussion

Article 3 structures the findings of the review into in three theoretical baselines that inform the development of the Destination Resilience Model.

First, the article outlines the conceptualisation and application of destination resilience within SES and DRR research. Socio-ecological system research has predominantly adopted a general resilience perspective with a focus on coping with and adapting to system disturbances (Biggs et al. 2012; Carpenter et al. 2001). Responding to unknown or unforeseen risks on different systemic levels is often associated with the development of generic principles or reoccurring resilience themes (e.g. Biggs et al. 2012; Hartman 2018; Lee et al. 2013; Orchiston et al. 2016): 1) diversity, variety and redundancy; 2) social networks, connectivity and partnerships; 3) reflexivity, information and awareness; 4) flexibility, innovation, creativity, adaptability and learning; and 5) participation, cohesion, equity, inclusion and collective action. Disaster risk reduction research on the other hand has a close link to concepts of risk, hazards, vulnerability and exposure. The focus of resilience is on the capacities or abilities of people, households, or communities to proactively or reactively manage specific risks (Adger 2000). In this research, the management of risk thus refers to actors' ability to prevent, prepare for, adapt to, respond to and recover from risks.

The second proposition derived from the literature review relates to how the *assessment* of resilience has been treated in the literature. The article problematises the assumption

underlying much prior research that resilience is an inherent and unchanging trait, property, or attribute of a destination, that can be measured statically in a specific location at a particular moment in time. Such a simplistic characterisation overlooks the dynamic nature of resilience. The review of the literature also highlights that the quantitative interpretation of resilience lacks adequate consideration for change and complexity, rendering it incompatible with a processual and dynamic perspective on resilience (Amore et al. 2018; Pyke et al. 2021; Quinlan et al. 2016).

Third, the article elaborates further on the role of human actors in the destination and on the concept of agency. This is crucial because framing resilience as the ability to act inevitably raises the question of who it is that needs to act. As Prayag (2018, p. 134) has stated, drawing on the systemic notion from SES research, the “resilience of a destination is often a matter of the resilience of its constituents”. Throughout the literature, it is repeatedly emphasised that the focal point of research engaging with concepts related to resilience should be the interpretations of actors and their agency in the context of adversities (Béné et al. 2012; Bristow and Healy 2014; Lorenz 2013; Posch et al. 2021). Grounded in agency, this perspective on resilience acknowledges that resilience is not a fixed property or stationary trait, emphasising instead the ability and willingness of individuals to undertake specific actions in the face of disturbances and risks (Posch et al. 2021). Table 4 summarises the theoretical baselines and their implications for the development of the Destination Resilience Model which is visualised in Figure 5.

Table 4: Destination Resilience Model implications of the proposed theoretical baselines

Theoretical baselines	Implications for the Destination Resilience Model
Social-ecological systems research	Change and complexity Five recurring general resilience principles: 1. Diversity and redundancy 2. Social networks 3. Reflexivity and awareness 4. Flexibility, adaptability and learning 5. Participation and collective action
Disaster risk research	Strong emphasis on risk and dynamic risk environment (hazards, vulnerability, and exposure) Capacities and abilities of people to adapt, prevent, recover, prepare and respond
Tourism destinations	Acknowledgement that a ‘destination’ is a multi-layered and complex system Human actors as the main constituents of the destination system
Agency-based resilience perspective	Central role of human actors as carriers of resilience

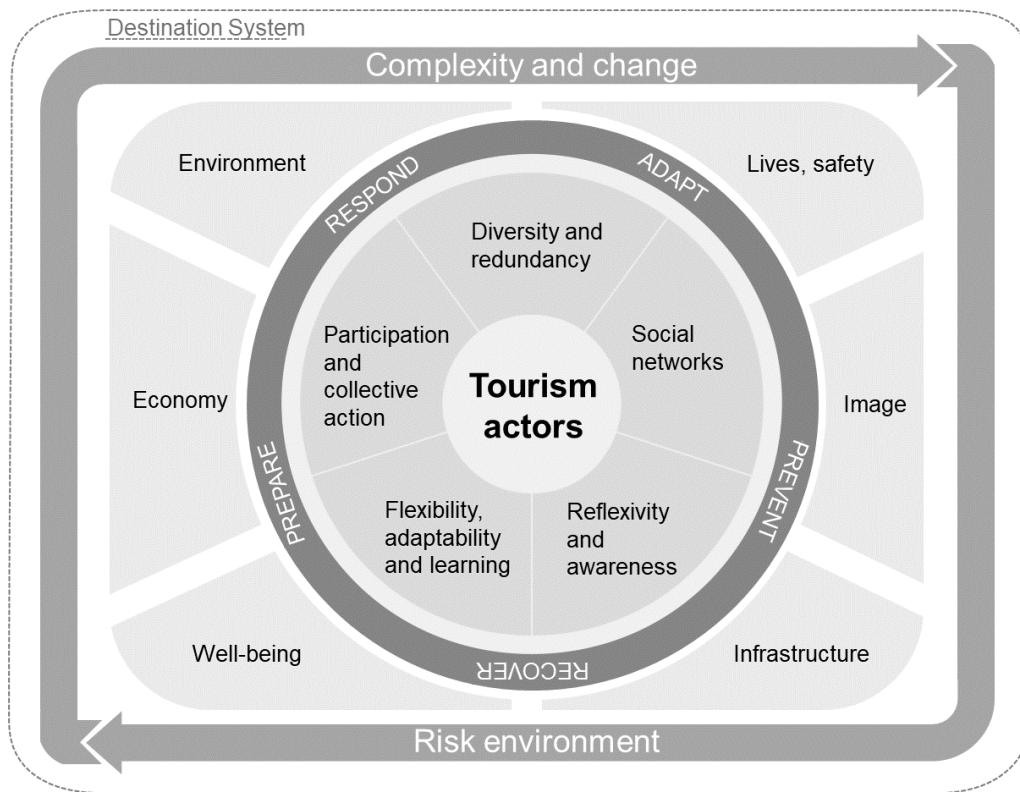


Figure 5: Destination Resilience Model (Source: Own figure based on DKKV & Futouris 2022)

Conclusion

Employing a conceptual research design, Article 3 set out to generate a new interpretation of destination resilience by synthesising theories and concepts from multidisciplinary bodies of knowledge. By innovatively merging conceptual elements from generic and specified resilience rooted respectively in SES and DRR research, the proposed Destination Resilience Model combines the capacities to address specific risks immediately while also building resilience towards novel and systemic risks. Notwithstanding, conceptual research is subject to inherent limitations. Since the model featuring the conceptual elements identified was derived from the researchers' interpretations rather than based on empirical data, personal biases cannot be ruled out. It must also be acknowledged that conceptual research can only analyse past narratives, which proves problematic with a concept as highly dynamic and rapidly evolving as resilience. Notwithstanding these limitations, the insights from this article conceptually advance the debate by elucidating the value of an actor-centred perspective focused on the abilities of tourism actors to address risk and by discussing the (mis)use of measuring approaches for resilience in light of the dynamic nature of this concept. When translating these insights to potential resilience assessment methodologies, it becomes evident that such an approach should be contextual, participatory, and dynamic, accounting for the adaptive and complex nature of resilience. Priority should be placed on designing methodologies that promote resilient action, raise awareness and create a sense of ownership among stakeholders, thereby strengthening their collective capacity to create resilient destination environments.

4.4 Book chapter: From Global Frameworks to Local Meanings: Building Resilience for Sustainable Destinations

Introduction

Article 4, the final contribution in this dissertation, is a book chapter that applies the propositions identified and discussed in Article 3 in accordance with the need for innovative and context-specific approaches that take account of the dynamic and adaptive nature of resilience and facilitate the operationalisation of this concept at local destination level. Based on the conceptual model of destination resilience introduced in Article 3 (Figure 5), Article 4 outlines the development of a resilience assessment methodology and provides empirical insights into its application from case study destinations in Namibia, the Dominican Republic, and Sri Lanka. The proposed and piloted assessment methodology builds on principles of transdisciplinary research (TDR) to facilitate a participatory approach to assessing resilience and account for different sets of knowledge. The overall aim of Article 4 is to explore how TDR can support destinations in making resilience-building initiatives more meaningful at local level. The study presented in this article demonstrates how theoretical concepts from multiple disciplines can be translated into a flexible methodology that allows for the development of locally relevant and actionable measures.

Current state of research

In delineating the role played by resilience in the transition towards sustainability, Article 4 further emphasises the close link between resilience, risk and sustainable development. Adding to the previous discussion on the topic, the article highlights the value of assessments as a tool for operationalising normative goals such as those associated with sustainability at local level and highlights the benefits of assessments in structuring complexity and conveying information. In light of the fact that chapter 3 of this dissertation framework paper covers these topics in an in-depth overview, no further elaboration on the literature review from the book chapter will take place at this point.

Research Design

Transdisciplinary research lends itself to the development of a participatory and contextual assessment methodology as it emphasises collaboration between academic and non-academic actors and has a strong focus on creating socially robust solutions to real-world problems (Belcher et al. 2019; Lang et al. 2012; Pärli et al. 2022; Sarkki et al. 2013). This emphasis on context and social engagement combined with exchange and integration between disciplines, proves particularly useful when addressing complex challenges (Lawrence et al. 2022). Moreover, the grounding of such research in societally relevant issues, the value it places on participatory approach and the need for a close connection to local context means adopting this approach is more likely to foster a sense of local ownership and

to gain acceptance among tourism actors for the proposed solutions (Thaler et al. 2021). As such, TDR meets the requirements outlined in Article 3 for the co-creation of solution-oriented interventions.

After elucidating the conceptual differences between sustainability and resilience and introducing assessment as a means to bridge the divide between global concepts and local realities, the article elaborates a resilience assessment methodology rooted in TDR principles, translating the conceptual baselines established in Article 3 and insights from the literature review of Article 4 into a five-step methodology for building resilience in tourism destinations (Table 5). The article provides an item-by-item explanation of the five steps and the reasoning behind them, linking each step to specific TDR knowledge types. Central to the proposed methodology is its strong focus on the tourism system, reflecting an emphasis on the importance of actors and their abilities (Step 1). The risk analysis within this model (Step 2) applies principles from DRR research, while Step 4 incorporates the analysis of enablers and barriers for resilient action decidedly picking up the call for practical, feasible and realistic solutions on the ground.

Table 5: Five-step assessment methodology with related conceptual elements, key questions and TDR knowledge types

	Conceptual elements	Key questions and knowledge types involved (S, T, A)²
Step 1	Tourism system	<ul style="list-style-type: none"> • What is the geographical scale of the destination of interest? (S) • Who are the main actors involved in the creation and delivery of the tourism product offered in the destination? (S) • What elements comprise and describe the destination? (S)
Step 2	Sources of risk	<ul style="list-style-type: none"> • Who or what is at risk (exposure) from what (sources of risk) and why (vulnerabilities)? (S) • How do the identified risks affect tourism? (S)
	Risk drivers	<ul style="list-style-type: none"> • What are underlying risk drivers that increase risk? (S)
Step 3	Options for action	<ul style="list-style-type: none"> • What options for action are available to respond to these risks and are desired by tourism actors? (T)
Step 4	Barriers and enablers	<ul style="list-style-type: none"> • What are barriers and enablers for taking resilient action? (A) • Which options for action are feasible? (A)
	Priorities	<ul style="list-style-type: none"> • How do local actors prioritise options for action to respond to risks? (T)

² S = system knowledge; T = target knowledge; A = transformative or action knowledge (based on Messerli and Messerli (2008).

Step 5	Strategy	<ul style="list-style-type: none"> • How can the identified barriers be overcome? (A) • How can the identified actions be translated into a strategy? (A)
	Responsibilities	<ul style="list-style-type: none"> • Who is responsible for the implementation of selected actions for building resilience? (A)

Given that the aim of this last contribution in the dissertation project is to explore how TDR can support destinations in making resilience building initiatives more meaningful on local level empirically testing the model from Article 3 was imperative. To test the applicability of the five-step methodology three tourism destinations could be selected as pilot destinations as part of a development cooperation project. Based on the funding agreements of the project, three countries were chosen for the pilot application: Sri Lanka, the Dominican Republic and Namibia. The Uva province in Sri Lanka, the Erongo region in Namibia and the Samaná province in the Dominican Republic were selected as pilot destinations. Moreover, in each of the three destinations a cooperation between local academic institutions and organisations was contracted and local project teams with academic and non-academic actors were assembled and tasked with the implementation of the resilience assessment. The local project teams carried out the resilience assessments based on the five-step assessment methodology in their respective destinations between March and September 2022. Table 6 exemplifies the data collection methods used by the local project teams in each destination to collect data for the respective steps.

Table 6 Overview of data collection methods from case study destinations

	Namibia	Dominican Republic	Sri Lanka
Step 1	Literature review Survey	Literature review	Literature review Focus groups
Step 2	Literature review Stakeholder workshops	Literature review Stakeholder workshops	Literature review Stakeholder workshops Focus groups
Step 3	Stakeholder workshop	Stakeholder workshop	Stakeholder workshop
Step 4	Stakeholder workshop Survey	Stakeholder workshop	Stakeholder workshop Survey
Step 5	Stakeholder workshop	Stakeholder workshop	Stakeholder workshop

Step 1 focuses on a description of the tourism system including an overview of the context, main actor groups and stakeholders of the formal and informal tourism industry and on relevant assets, products and services in the destination. Data on this step was collected through desk research on existing data sets, tourism statistics, strategies and reports. Some local project

teams complemented their desk research with further data collection methods. The team in Namibia carried out a survey with 20 key stakeholders from the industry at national level to gain a better understanding of the Namibian tourism system. The team from Sri Lanka conducted two focus groups (n=9; n=4) with local tourism stakeholders from Ella inquiring about the tourism system and the risk landscape. Step 2 provides an overview of hazards, risks and their adverse impacts on tourism. Step 3 then proceeds to identify key risks for tourism, discusses underlying risk drivers and reviews potential options for action. In addition to the literature reviews on this topic (IPCC reports, national risk plans, scientific papers) each local project team carried out a workshop with destination stakeholders (Namibia n=50; Dominican Republic n=28; Sri Lanka n=33). The groups consisted of local experts, tourism stakeholders, non-governmental organisations and participants with a background in academia (natural resource management, disaster risk reduction, geography, biodiversity). The local project teams used participatory workshops methods and tools such as gallery walks, World Café method, risk matrices and risk impact chain mapping. Step 4 includes an overview of local preferences for action and the identification of enabling and hindering factors for action. The local teams in Sri Lanka and Namibia carried out short surveys to identify feasible and relevant options that were also considered desirable by destination stakeholders. The Sri Lankan team carried out a quantitative survey with 50 respondents from the public and private sector and provided a list with options for action that participants could then rank on a 4-point Likert scale. Moreover, participants were asked about barriers to pursuing targeted resilience action in Ella. The survey results also provided the baseline for the second workshop in Ella. Lastly, all research teams carried out a second workshop (Namibia n=25; Dominican Republic n=34; Sri Lanka n=32) to address the identification of responsibilities from Step 5 and develop a shared pathway forward. The workshops started with a presentation of the findings from Step 1-3 and the results of the analysis from Step 4. The project team from Namibia employed a gallery walk for this opening activity to create an atmosphere conducive to the following discussion. For the identification of responsibilities and strategies as proposed in Step 5 the local team from the Dominican Republic implemented a trans-sectoral resilience roundtable in the workshop and set up different roles and functions in local institutions, associations and private sector actors. Further information about the exact methodologies in each destination and the methods applied for each step can be retrieved from DKKV & Futouris (2022).

As a result of this 5-step process the authors were left with a comprehensive resilience assessment and risk analysis for each destination, a list of feasible, realistic measures to increase resilience, specific and general resilience building strategies as well as strategies with roles and responsibilities.

Results and discussion

Despite its insights into the application of the proposed resilience assessment methodology in a variety of destination contexts the aim of this last contribution in the dissertation project is to explore how TDR can support destinations in making resilience building initiatives more meaningful on a local level. In line with the focal point of the synthesis of the entire dissertation project which relates to the implementation of assessment methodologies in a participatory and contextual manner insights from the development cooperation project will be outlined.

A key potential in the use of TDR and the diverse compilation of the respective project teams in the pilot destination lies in the fact that local project team members were not necessarily residents of the capitals or other provinces but residents of the pilot destinations. This not only led to vast knowledge about the area and local tourism development on part of the project team members but also helped to scale up the community engagement in the assessment process. The very connected local team members could attract large and very diverse groups of tourism stakeholders to the workshops but also allowed for the identification of key stakeholders for surveys or focus groups. Another observation was that carrying out the entirety of the data collection in local language and employing local facilitators for workshops and focus groups highly supported the ability of local tourism actors to express their opinions, attitudes and perceptions. Conducting the assessment in the local language is essential as understanding and communicating the meaning behind terms and the technical language particularly associated with the concepts surrounding the term 'risk' also vary greatly across different languages (Cannon and Schipper 2014).

Moreover, the intentional employment of methods that enable exchange, idea sharing, collection of information, opinions and attitudes from local stakeholders aided not only the ability of participants to contribute but also their motivation. Invitations, communication about the process, venues and contents could be distributed via local communication channels and transportation to and from the venues could also be organised locally. Overall, the very locally anchored process and approach seemed to strengthen the self-reliance of the destination and increase the ownership of the proposed solutions. Especially in development cooperation projects, an approach that is completely locally anchored and implemented without the employment of external agents is still not always a given.

Overall, Article 4 underscores the expediency of utilising a TDR approach in assessing resilience at the destination scale. It reveals potentials for addressing key aspects of the resilience concept and enabling the development of practical results as well as on-the-ground measures. The proposed approach of locally based assessments highlights the merits of developing a strategy *in* the destination *for* the destination. The barriers presented by such technical language and scientific terminology are also reflected in the results of the Delphi

survey presented in Article 2. Article 4 also addresses the commonly criticised shortcoming of limited data availability for assessments. The results of the three assessments carried out in the case study destinations show that the absence of systematically collected and monitored data on sustainability, risk, and disasters does not necessarily indicate a lack of comprehension regarding risk and its effective management on part of tourism actors. Instead, these results align with findings of previous studies on tourism planning and development that outline how the inclusion of local knowledge and the consultation of stakeholders from the third sector has long gone unrecognised to a great extent. As the discussion in this article notes, however, there is a growing recognition among scholars of the added value of local knowledge in building resilience, especially in research on disaster contexts (Brito et al. 2011; Chan et al. 2022; Orchiston and Higham 2016). Moreover, the study offers high potential for comparison and generalisation of results due to the pilot application in three very different geographical scales with very diverse destination characteristics and hazard landscapes. By providing tools that cover a broad spectrum of destinations and risk profiles, the proposed resilience assessment methodology allows for considerable flexibility in terms of the scale of the unit being studied. The employment of TDR principles into the development of the assessment methodology proves to be beneficial in elevating the levels of motivation, opportunity and ability of local tourism actors to contribute to the participatory process.

In sum, Article 4 advances the debate on destination resilience by integrating TDR principles into the development of a resilience assessment methodology. The article maps out an innovative assessment methodology that is process-oriented, participatory, adaptive and feasible with specific emphasis on the integration of local knowledge. Considering that the ability to effectively manage risk is increasingly considered a key skill for destination managers, the study also offers practical application by proposing an easy-to-follow five-step approach that has been piloted in three destinations. Moving forward, there is a need for increased efforts to ensure that global frameworks continue to serve as guiding principles but are adapted to local realities, thereby translating intentions into actionable measures on the ground.

5 Conclusion

Synthesis

The overarching aim connecting all the studies conducted for this dissertation project was to address the need for advanced, inclusive, comprehensive and practical methodological approaches for developing and implementing assessments of the sustainability and resilience of tourism destinations. The dissertation evidences and elucidates the potential of such assessments as an effective tool for bridging the divide between normative and subordinate concepts of sustainability and resilience and for rendering these concepts operational for application on the ground.

In the context of sustainability assessments (SAs), the dissertation formulates novel approaches for effectively developing sustainable tourism indicators (STIs) for SA while considering STI adaptation as well as STI development that accounts for local destination circumstances. In the resilience context, the dissertation first takes a step back to clarify what 'being resilient' actually implies in a destination context before translating conceptual elaborations into a locally applicable destination resilience assessment methodology. This final part of the framework paper synthesises and discusses the key findings of the four studies to show how the dissertation answers the overarching research question of *how to conceptualise and implement methodologies for destination sustainability and resilience assessment*.

Articles 1 and 2 clearly demonstrate that using a generic set of STIs is not expedient for assessing sustainability at destination level, underscoring the importance of developing and adapting STIs based on local contexts. The findings presented in Article 1 in particular show the severe consequences of not adapting SAs and their STIs to the specific circumstances of a destination, demonstrating how the omission of key social challenges such as social inequality and water scarcity would have led to an inconclusive assessment of little operational value. These findings are consistent with prior studies that have similarly identified an increase in the adaptation of indicators in practice and called for a focus on STI development and adaptation in future research (Diéguez-Castrillón et al. 2021; Font et al. 2021).

The findings presented in Article 2 confirm this growing trend towards prioritising the effectiveness of SAs and development of STIs adapted to local conditions over the need for scientific rigour and strict consistency with global indicators. These findings further demonstrate that the potential merits of collaborative STI development extend well beyond meeting the intended purpose of SAs. Overall, this article makes the case for an increase in destination-specific and participatory approaches that account for local characteristics and prioritise the participatory character of the assessment process over comparability through adherence to strict standards. Even in the period in which this dissertation was prepared, from 2020 to 2023, a growing number of studies both in research on resilience and the literature on

tourism sustainability have reiterated the same point emphasised in Article 2 regarding the adverse consequences of focussing too narrowly on following the processes of assessment itself rather than outcomes at destination-level (Balas and Abson 2022; Crabolu et al. 2023; Islam et al. 2021; Miller and Torres-Delgado 2023; Reyers et al. 2022; UNWTO 2023).

Article 3 begins with a conceptual review of the literature to resolve ambiguities in the use of the term 'resilience'. Drawing on insights from this review the following essential themes for the conceptualisation of resilience and its future assessment in tourism destinations emerge: 1) the value of adopting an actor-centred and agency-based perspective; 2) the dynamic nature of resilience and hence the incompatibility and inappropriacy of applying static measuring approaches; and 3) the merits of combining insights from narratives in SES and DRR scholarship to develop and implement inclusive and flexible methods of assessing resilience that foster the ability of local tourism actors to respond to particular risks as well as systemic and unforeseen risks. After deriving a set of theoretical baselines from the findings of the conceptual research and identifying their implications, the article applies these baselines to inform a new conceptual model of resilience that links the associated concepts of destination and risk.

In Article 4 these conceptual insights and model are translated into a methodology for destination resilience assessment that is piloted in three diverse tourism destinations in Namibia, Sri Lanka, and the Dominican Republic. The employment of transdisciplinary research in the development and implementation of the proposed resilience assessment methodology allows for a process-oriented, adaptive and feasible assessment and for the development of resilience-building strategies *in* the destination *for* the destination. This approach is consistent with the need for integrating local knowledge that is reiterated and evidenced throughout this dissertation.

Taken together, all four articles clearly support the argument that assessments should not be understood merely as an end in themselves but instead designed to harness the potential of SAs to encourage greater stakeholder participation in the process of breaking down generic indicators into STIs adapted to local realities. Referring back to the general objectives of an assessment, the studies show that the effects of an assessment need to be prioritised over the assessment tools themselves to equip communities with the abilities to act and alternate strategies accordingly to initiate resilient action.

Limitations

Each of the four studies has its own limitations. These specific limitations are acknowledged within each article but can mostly be traced back to the methods employed. Thus, Article 1 does not provide reasons to explain the phenomenon of non-adaptation in current assessment methodologies but focuses instead on the severity and the issues associated with the current

practices. The possibility of researcher bias in the choice of STIs must also be acknowledged, as should the fact that the recommendations were drawn from a single case study. Article 2 demonstrates commonalities between proposed hybrid methodologies and although the expert selection for the Delphi survey was based on recognised identification methods, biases of the researcher in the choice of experts and the interpretation of results cannot be ruled out. Given its conceptual nature, Article 3 is also subject to certain limitations. In particular, the proposed model is based solely on the exploration of concepts from a limited selection of literature and grounded in the subjective interpretation of the latter through the researchers. This in turn means that personal biases in the development of the theoretical baselines and steps in the destination resilience assessment methodology cannot be dismissed. Cross-case comparison of the assessments themselves is subject to limitations, moreover, on account of the diverse nature of the three pilot destinations, differences in the ways the methodologies were applied on the ground, and the co-creation of results with local stakeholders. Mitigating these limitations, Article 4 provides evidence if the theoretical propositions from Article 3 hold true in idiosyncratic destination conditions and under varying risk profiles. Overall, in order to bolster the validity and generalisability of the results, each of the four studies outlines the measures taken to validate the proposed constructs and substantiate their applicability. Finally, as an overall limitation, this dissertation project addresses a very vast research scope (i.e. sustainability and resilience) and can therefore only offer limited insights into aspects that are particularly related to the development and implementation of assessment methodologies.

Managerial implications

From a destination management perspective, sustainable tourism entails effective governance, policies and evaluation tools for planning and managing its development (Bramwell and Lane 2011). The ability to address risk effectively and to raise awareness and educate destination stakeholders on sustainability has already been established as a key skill for destination managers. In addressing future challenges and uncertainties over the coming years, the concept of resilience is certain to increase in salience for governments, trans-national bodies and community leaders (Prayag 2023). This dissertation project supports destination management by translating theoretical concepts into practical methodologies for developing and implementing locally relevant and actionable measures, providing a step-by-step framework for STI adaptation and resilience assessment as well as approaches and formats for conceptualising STI development processes.

The tasks of destination management organisations (DMOs) are changing rapidly. In particular, the work of these organisations is shifting from a focus on the marketing of destinations towards an expanded understanding of the role of DMOs as networkers, think tanks, advisors and catalysts supporting sustainable, competitive and future-oriented

transformation. The increasing demand for sustainability managers in these organisations points to their vital role in identifying and addressing environmental challenges, promoting sustainable strategies, communicating complex sustainability issues to broader audiences, and acting as motivators who inspire and encourage stakeholders to participate in sustainable initiatives. A growing number of destination management organisations have now also established the role of climate change managers to address not only the issue of reducing emissions but also for adapting to and building resilience to climate change. Given that difficult and unpopular decisions will need to be made in this transformation, it is crucial to recognize that the potential disruption caused by this process can be mitigated by encouraging greater collaboration and integration among destination stakeholders and by raising their levels of awareness and knowledge about sustainability and resilience (Farsari 2023; Miller and Torres-Delgado 2023; Volgger et al. 2021).

Recommendations for future research

Given that the involvement of destination stakeholders in the process of transforming to sustainable tourism will be pivotal for achieving targets and changes in behaviour, future research should further focus on the implementation of participatory assessments and reflect on the adequacy and effectiveness of the tools and methods proposed in this dissertation. As evident from the findings of the studies presented in this framework paper, the motivation, ability and willingness of stakeholders to participate is critical to the success of sustainability initiatives. Comparing existing approaches and outlining methods and processes in more detail can thus be a fruitful area for further research. Future studies could further explore the feasibility of the proposed hybrid methodologies for developing STIs and the moderation of these processes by destination stakeholders with varying levels of prior sustainability knowledge.

Regarding future research on resilience, one avenue worth exploring would be to focus more closely on the combination of generic and specified resilience application. Given the rapidly changing environments due to political conflicts or civil unrest and high adaptation demands due to climate change impacts in most tourism destinations, a sole focus on systemic risks will not suffice but must be complemented with immediate risk management strategies. In this context, further integration of TDR principles into assessments would help to establish a greater understanding about the integration of diverse sets of knowledge and the creation of socially robust solutions.

Contributions

The dissertation contributes to the debate on sustainability and resilience assessment in three primary ways. In terms of contributions to theory, it elaborates theoretical propositions for how best to adapt sets of indicators to local conditions for destination SAs. Moreover, it reconceptualises the broader multidisciplinary and conceptual foundations of STI development, providing a structured understanding of the complex three-way trade-offs between the priorities of scientists, policymakers, and advocates of participatory development, using a Delphi survey to identify areas of consensus among these actors on innovative hybrid methodologies. In the realm of resilience, the dissertation analyses conceptualisations and operationalisations of resilience from different research traditions and provides a Destination Resilience Model that innovatively synthesis SES and DRR narratives. With this model the theoretical baselines and implications derived from conceptual research are thus translated into a destination resilience assessment methodology that innovatively integrates principles of transdisciplinary research into assessment. On a methodological note, Articles 1, 2 and 4 introduce participatory sustainability and resilience assessment methodologies that facilitate exchange among stakeholders and enable the development of feasible, practical and realistic solutions. As a procedural contribution, the dissertation provides evidence and argumentation that participatory assessment can be a valuable tool for raising awareness and fostering a sense of ownership among stakeholders, stimulating an exchange of views and catalysing processes of mutual learning. Making the case for prioritising quality over quantity in assessment, the dissertation emphasises the need to shift the focus from conducting assessments per se and a fixation on comparability and consistency to focus instead on achieving the actual primary aims of assessments, namely to improve sustainability and resilience in the destination (Miller and Torres-Delgado 2023). This pragmatic approach is necessary to harness what Crabolu et al. (2023, p. 2) have termed the “hidden power” of assessment schemes to facilitate dialogue, including the discussion and disputation of different stakeholder perspectives, to encourage learning, to promote network development, and to guide systemic changes toward sustainable destination management. Taken together, the studies conducted for this dissertation show that employing flexible approaches tailored to local contexts and prioritising usability over precision is the most effective way to scale up engagement with sustainability in communities. As we navigate the complex terrain of sustainable development, it will only become more imperative to ensure that destination stakeholders are well-versed both in sustainability and resilience and empowered to make informed decisions as they collectively chart a path forward towards a more resilient and sustainable future.

6 References

- Adger, W.N. (2000): Social and ecological resilience: are they related?, *Progress in Human Geography*, Vol. 24 No. 3, pp. 347–364.
- Aliperti, G., Sandholz, S., Hagenlocher, M., Rizzi, F., Frey, M. and Garschagen, M. (2019): Tourism, crisis, disaster: An interdisciplinary approach, *Annals of Tourism Research*, Vol. 79 No. 102808.
- Alvesson, M. and Sandberg, J. (2011): Generating Research Questions Through Problematization, *Academy of Management Review*, Vol. 36 No. 2, pp. 247–271.
- Amore, A., Prayag, G. and Hall, C.M. (2018): Conceptualizing Destination Resilience From a Multilevel Perspective, *Tourism Review International*, Vol. 22 No. 3, pp. 235–250.
- Asmelash, A. and Kumar, S. (2019): Assessing progress of tourism sustainability: Developing and validating sustainability indicators, *Tourism Management*, Vol. 71, pp. 67–83.
- Balas, M. and Abson, D.J. (2022): Characterising and identifying gaps in sustainability assessments of tourism - a review, *Tourism Management Perspectives*, Vol. 43, p. 101004.
- Belcher, B.M., Claus, R., Davel, R. and Ramirez, L.F. (2019): Linking transdisciplinary research characteristics and quality to effectiveness: A comparative analysis of five research-for-development projects, *Environmental Science & Policy*, Vol. 101, pp. 192–203.
- Bell, S., Morse, S. (2003): *Measuring sustainability: Learning by doing*, Earthscan Publications, London.
- Bell, S. and Morse, S. (2018): Participatory Approaches for the Development and Evaluation of Sustainability Indicators, in Bell, S. and Morse, S. (Eds.), *Routledge Handbook of Sustainability Indicators*, Routledge, New York, pp. 188–203.
- Bello, F.G., Carr, N. and Lovelock, B. (2016): Community participation framework for protected area-based tourism planning, *Tourism Planning & Development*, Vol. 13 No. 4, pp. 469–485.
- Béné, C., Wood, R.G., Newsham, A. and Davies, M. (2012): Resilience: New Utopia or New Tyranny? Reflection about the Potentials and Limits of the Concept of Resilience in Relation to Vulnerability Reduction Programmes, *IDS Working Papers*, Vol. 2012 No. 405, pp. 1–61.
- Bhaskar, R. (2011): *Reclaiming reality: A critical introduction to contemporary philosophy, Classical texts in critical realism*, Routledge, New York.
- Bhaskar, R. (2016): *Enlightened common sense: The philosophy of critical realism*, Routledge, New York.

- Biermann, F., Kanie, N. and Kim, R.E. (2017): Global governance by goal-setting: the novel approach of the UN Sustainable Development Goals, *Current Opinion in Environmental Sustainability*, 26-27, pp. 26–31.
- Biggs, D., Hall, C.M. and Stoeckl, N. (2012): The resilience of formal and informal tourism enterprises to disasters: reef tourism in Phuket, Thailand, *Journal of Sustainable Tourism*, Vol. 20 No. 5, pp. 645–665.
- Blancas, F.J., Lozano-Oyola, M., González, M., Guerrero, F.M. and Caballero, R. (2011): How to use sustainability indicators for tourism planning: the case of rural tourism in Andalusia (Spain), *Science of the Total Environment*, 412-413, pp. 28–45.
- Botterill, D. (2003): An Autoethnographic Narrative on Tourism Research Epistemologies, *Loisir et Société / Society and Leisure*, Vol. 26 No. 1, pp. 97–110.
- Bramwell, B. and Lane, B. (2011): Critical research on the governance of tourism and sustainability, *Journal of Sustainable Tourism*, Vol. 19 No. 4-5, pp. 411–421.
- Bristow, G. and Healy, A. (2014): Regional Resilience: An Agency Perspective, *Regional Studies*, Vol. 48 No. 5, pp. 923–935.
- Brito, P.M. de, Ferreira, A.M. and Costa, C. (2011): Tourism and Third Sector Organisations—Strangers or Partners?, *Tourism Planning & Development*, Vol. 8 No. 1, pp. 87–100.
- Bunge, M. (1993): Realism and antirealism in social science, *Theory and Decision*, Vol. 35 No. 3, pp. 207–235.
- Butowski, L. and Butowski, S. (2023): Exploring Ontology of Tourism: A New-Realist Approach, *Journal of Travel Research*, Vol. 62 No. 4, pp. 719–733.
- Calgaro, E., Dominey-Howes, D. and Lloyd, K. (2014): Application of the Destination Sustainability Framework to explore the drivers of vulnerability and resilience in Thailand following the 2004 Indian Ocean Tsunami, *Journal of Sustainable Tourism*, Vol. 22 No. 3, pp. 361–383.
- Cannon, T., Schipper, L. (2014): World disasters report 2014: Focus on culture and risk., available at: <https://www.ifrc.org/world-disasters-report-2014>.
- Carpenter, S., Walker, B., Anderies, J.M. and Abel, N. (2001): From Metaphor to Measurement: Resilience of What to What?, *Ecosystems*, Vol. 4 No. 8, pp. 765–781.
- Carter, B. and New, C. (2005): Realist social theory and empirical research, in Carter, B. and New, C. (Eds.), *Making Realism Work Realist Social Theory and Empirical Research*, Routledge.
- Castellani, V. and Sala, S. (2010): Sustainable performance index for tourism policy development, *Tourism Management*, Vol. 31 No. 6, pp. 871–880.

- Castellani, V. and Sala, S. (2012): Ecological Footprint and Life Cycle Assessment in the sustainability assessment of tourism activities, *Ecological Indicators*, Vol. 16, pp. 135–147.
- Cernat, L. and Gourdon, J. (2012): Paths to success: Benchmarking cross-country sustainable tourism, *Tourism Management*, Vol. 33 No. 5, pp. 1044–1056.
- Chan, C.-S., Nozu, K. and Zhou, Q. (2022): Building destination resilience in the tourism disaster management process from the past experiences: The case of the 2018 Hokkaido Eastern Iburi earthquake in Japan, *Tourism Recreation Research*, Vol. 47 No. 5-6, pp. 527–543.
- Choi, H.C. and Sirakaya, E. (2006): Sustainability indicators for managing community tourism, *Tourism Management*, Vol. 27 No. 6, pp. 1274–1289.
- Cloquell-Ballester, V.-A., Cloquell-Ballester, V.-A., Monterde-Díaz, R. and Santamarina-Siurana, M.-C. (2006): Indicators validation for the improvement of environmental and social impact quantitative assessment, *Environmental Impact Assessment Review*, Vol. 26 No. 1, pp. 79–105.
- Cockburn, J. (2022): Knowledge integration in transdisciplinary sustainability science: Tools from applied critical realism, *Sustainable Development*, Vol. 30 No. 2, pp. 358–374.
- Correia, A. and Kozak, M. (2022): Past, present and future: trends in tourism research, *Current Issues in Tourism*, Vol. 25 No. 6, pp. 995–1010.
- Crabolu, G., Font, X. and Miller, G. (2023): The Hidden Power of Sustainable Tourism Indicator Schemes: Have We Been Measuring Their Effectiveness All Wrong?, *Journal of Travel Research*.
- Crabtree, B. and Bayfield, N. (1998): Developing sustainability indicators for mountain ecosystems: a study of the Cairngorms, Scotland, *Journal of Environmental Management*, Vol. 52 No. 1, pp. 1–14.
- Crotty, M. (1998): *The foundations of social research: Meaning and perspective in the research process*, SAGE, London.
- Diéguez-Castrillón, M.I., Gueimonde-Canto, A. and Rodríguez-López, N. (2021): Sustainability indicators for tourism destinations: bibliometric analysis and proposed research agenda, *Environment, Development and Sustainability*, Vol. 24 No. 3, pp. 11548–11575.
- DKKV & Futouris (2022): Resilience Analysis Guideline for Tourism Destinations: Introducing key concepts and methodological steps to analyse destination resilience, available at: https://dkkv.org/wp-content/uploads/2022/11/DKKV_Futouris_Resilience_Guideline.pdf.
- Dredge, D. (2019): Governance, tourism, and resilience. A long way to go?, in Saarinen, J. and Gill, A. (Eds.), *Resilient destinations and tourism: Governance strategies in the transition towards sustainability in tourism*, Routledge, London, New York, pp. 48–66.

- Eckert, E. (2020): Assessment of sustainable tourism development in Windhoek, Namibia Development and implementation of an adapted criteria catalogue in line with respective local conditions, Master's Thesis, City University of Applied Sciences Bremen, Bremen.
- Eckert, E. and Posch, E.L. (n.y.): From Global Frameworks to Local Meanings: Building Resilience for Sustainable Destinations, in Pillmayer, M. in, Hansen, M. and Karl, M. (Eds.), *Tourism destination development: A geographic perspective on destination management and tourist demand*, De Gruyter Oldenbourg, Germany [accepted manuscript].
- Eisenhardt, K.M. (1989): Building Theories from Case Study Research, *The Academy of Management Review*, Vol. 14 No. 4, pp. 532–550.
- Eisenhardt, K.M. and Graebner, M.E. (2007): Theory Building From Cases: Opportunities And Challenges, *Academy of Management Journal*, Vol. 50 No. 1, pp. 25–32.
- Espinero, S., Orchiston, C. and Higham, J. (2017): Resilience and sustainability: a complementary relationship? Towards a practical conceptual model for the sustainability–resilience nexus in tourism, *Journal of Sustainable Tourism*, Vol. 25 No. 10, pp. 1385–1400.
- European Commission (2016): The European Tourism Indicator System: ETIS toolkit for sustainable destination management, Publications Office, Luxembourg.
- Farsari, I. (2023): Exploring the nexus between sustainable tourism governance, resilience and complexity research, *Tourism Recreation Research*, Vol. 48 No. 3, pp. 352–367.
- Filimonau, V. (2016): Life cycle assessment (LCA) and life cycle analysis in tourism: A critical review of applications and implications, Springer, Cham.
- Firestone, W.A. (1993): Alternative Arguments for Generalizing From Data as Applied to Qualitative Research, *Educational Researcher*, Vol. 22 No. 4, pp. 16–23.
- Flyvbjerg, B. (2006): Five Misunderstandings About Case-Study Research, *Qualitative Inquiry*, Vol. 12 No. 2, pp. 219–245.
- Font, X., Torres-Delgado, A., Crabolu, G., Palomo Martinez, J., Kantanbacher, J. and Miller, G. (2021): The impact of sustainable tourism indicators on destination competitiveness: the European Tourism Indicator System, *Journal of Sustainable Tourism*, Vol. 9 No. 18, pp. 1–24.
- Gale, T. and Botterill, D. (2005): A realist agenda for tourist studies, or why destination areas really rise and fall in popularity, *Tourist Studies*, Vol. 5 No. 2, pp. 151–174.
- GIDRM (n.y.): What is risk-informed development?, available at: <https://www.gidrm.net/en/gidrm/what-is-risk-informed-development>.
- Gioia, D.A., Corley, K.G. and Hamilton, A.L. (2013): Seeking Qualitative Rigor in Inductive Research, *Organizational Research Methods*, Vol. 16 No. 1, pp. 15–31.

- Grix, J. (2002): Introducing Students to the Generic Terminology of Social Research, *Politics*, Vol. 22 No. 3, pp. 175–186.
- Häder, M. (2014): Delphi-Befragungen: Ein Arbeitsbuch, Lehrbuch, 3. Aufl., Springer VS, Wiesbaden.
- Hall, C.M., Prayag, G., Amore, A. (2017): Tourism and Resilience: Individual, Organisational and Destination Perspectives, Channel View Publications, Bristol, UK.
- Hall, C.M., Safonov, A. and Naderi Koupaei, S. (2023): Resilience in hospitality and tourism: issues, synthesis and agenda, *International Journal of Contemporary Hospitality Management*, Vol. 35 No. 1, pp. 347–368.
- Hall, M.C. (2019): Resilience theory and tourism, in Saarinen, J. and Gill, A. (Eds.), *Resilient destinations and tourism: Governance strategies in the transition towards sustainability in tourism*, Routledge, London, New York, pp. 34–47.
- Hartman, S. (2018): Resilient tourism destinations? Governance implications of bringing theories of resilience and adaptive capacity to tourism practice, in Innerhofer, E., Fontanari, M. and Pechlaner, H. (Eds.), *Destination Resilience: Challenges and Opportunities for Destination Management and Governance*, Routledge, New York, pp. 66–76.
- Huovila, A., Bosch, P. and Airaksinen, M. (2019): Comparative analysis of standardized indicators for Smart sustainable cities: What indicators and standards to use and when?, *Cities*, Vol. 89 No. 1, pp. 141–153.
- Islam, M.S., Lovelock, B. and Coetzee, W.J.L. (2021): Liberating sustainability indicators: developing and implementing a community-operated tourism sustainability indicator system in Boga Lake, Bangladesh, *Journal of Sustainable Tourism*, pp. 1–21.
- Ivars-Baidal, J.A., Celdrán-Bernabeu, M.A., Femenia-Serra, F., Perles-Ribes, J.F. and Giner-Sánchez, D. (2021): Measuring the progress of smart destinations: The use of indicators as a management tool, *Journal of Destination Marketing & Management*, Vol. 19 No. 1, p. 100531.
- Jamal, T. and Camargo, B.A. (2014): Sustainable tourism, justice and an ethic of care: toward the Just Destination, *Journal of Sustainable Tourism*, Vol. 22 No. 1, pp. 11–30.
- Kaynak, E. and Macaulay, J.A. (1984): The Delphi technique in the measurement of tourism market potential, *Tourism Management*, Vol. 5 No. 2, pp. 87–101.
- Kirillova, K. and Yang, I.-C.M. (2022): The curse of conceptual research in tourism, *Annals of Tourism Research*, Vol. 93, p. 103368.
- Ko, T.G. (2005): Development of a tourism sustainability assessment procedure: a conceptual approach, *Tourism Management*, Vol. 26 No. 3, pp. 431–445.

- Kristjánisdóttir, K.R., Ólafsdóttir, R. and Ragnarsdóttir, K.V. (2017): Stakeholder Participation in Developing Sustainability Indicators for a European Northern Periphery Tourism System, *The Journal of Rural and Community Development*, Vol. 12 No. 2-3, 210-235.
- Kristjánisdóttir, K.R., Ólafsdóttir, R. and Ragnarsdóttir, K.V. (2018): Reviewing integrated sustainability indicators for tourism, *Journal of Sustainable Tourism*, Vol. 26 No. 4, pp. 583–599.
- Laimer, P. (2017): Tourism Indicators for Monitoring the SGDs. Presentation at 6th International UNWTO Conference on Tourism Statistics “Measuring Sustainable Tourism”, Manila, Philippines, 21 –24 June 2017, available at: https://webunwto.s3-eu-west-1.amazonaws.com/imported_images/48592/laimer_conf2017manila_central_paper.pdf.
- Landeta, J. (2006): Current validity of the Delphi method in social sciences, *Technological Forecasting and Social Change*, Vol. 73 No. 5, pp. 467–482.
- Lang, D.J., Wiek, A., Bergmann, M., Stauffacher, M., Martens, P., Moll, P., Swilling, M. and Thomas, C.J. (2012): Transdisciplinary research in sustainability science: practice, principles, and challenges, *Sustainability science*, Vol. 7 No. S1, pp. 25–43.
- Lawrence, M.G., Williams, S., Nanz, P. and Renn, O. (2022): Characteristics, potentials, and challenges of transdisciplinary research, *One Earth*, Vol. 5 No. 1, pp. 44–61.
- Laws, E., Ferraretto, V., Moscardo, G. (2003): Embracing and Managing Change in Tourism: International Case Studies, Routledge, London.
- Lee, A.V., Vargo, J. and Seville, E. (2013): Developing a Tool to Measure and Compare Organizations’ Resilience, *Natural Hazards Review*, Vol. 14 No. 1, pp. 29–41.
- Lee, T.H. and Hsieh, H.-P. (2016): Indicators of sustainable tourism: A case study from a Taiwan’s wetland, *Ecological Indicators*, Vol. 67, pp. 779–787.
- Lesar, L., Weaver, D. and Gardiner, S. (2020): Beyond certification: an empirically expanded quality control tool ‘multiverse’ for sustainable tourism, *Journal of Sustainable Tourism*, Vol. 28 No. 10, pp. 1625–1645.
- Lew, A.A., Ng, P.T., Ni, C. and Wu, T. (2016): Community sustainability and resilience: similarities, differences and indicators, *Tourism Geographies*, Vol. 18 No. 1, pp. 18–27.
- Little, D. (1993): Evidence and Objectivity in the Social Sciences, *Social Research*, No. 60(2), pp. 363–96.
- Locke, K. and Golden-Biddle, K. (2004): An introduction to qualitative research: its potential for industrial and organizational psychology, in Rogelberg, S.G. (Ed.), *Handbook of Research Methods in Industrial and Organizational Psychology*, Blackwell Publishing Ltd, Oxford, UK, pp. 99–118.
- Loehr, J. and Becken, S. (2023): Leverage points to address climate change risk in destinations, *Tourism Geographies*, Vol. 25 No. 2-3, pp. 820–842.

- Lorenz, D.F. (2013): The diversity of resilience: contributions from a social science perspective, *Natural Hazards*, Vol. 67 No. 1, pp. 7–24.
- Lozano-Oyola, M., Blancas, F.J., González, M. and Caballero, R. (2012): Sustainable tourism indicators as planning tools in cultural destinations, *Ecological Indicators*, Vol. 18, pp. 659–675.
- Lupoli, C.A., Morse, W.C., Bailey, C. and Schelhas, J. (2015): Indicator development methodology for volunteer tourism in host communities: creating a low-cost, locally applicable, rapid assessment tool, *Journal of Sustainable Tourism*, Vol. 23 No. 5, pp. 726–747.
- Markwell, K. (2020): Foreword, in Grimwood, B.S.R., Caton, K. and Cooke, L. (Eds.), *NEW MORAL NATURES IN TOURISM*, Routledge.
- Matteucci, X., Nawijn, J. and Zumbusch, J. von (2022): A new materialist governance paradigm for tourism destinations, *Journal of Sustainable Tourism*, Vol. 30 No. 1, pp. 169–184.
- Mauksch, S., Gracht, H.A. von der and Gordon, T.J. (2020): Who is an expert for foresight? A review of identification methods, *Technological Forecasting and Social Change*, Vol. 154 No. 2, p. 119982.
- Maxwell, J. (2009): Designing a Qualitative Study, in Rog, D.J. and Bickman, L. (Eds.), *The SAGE Handbook of Applied Social Research Methods*, 2nd ed., SAGE, London, pp. 214–253.
- McCool, S., Butler, R., Buckley, R., Weaver, D. and Wheeler, B. (2013): Is Concept of Sustainability Utopian: Ideally Perfect but Impracticable?, *Tourism Recreation Research*, Vol. 38 No. 2, pp. 213–242.
- Messerli, B. and Messerli, P. (2008): From Local Projects in the Alps to Global Change Programmes in the Mountains of the World: Milestones in Transdisciplinary Research. Milestones in Transdisciplinary Research, in Hirsch Hadorn, G. and Jäger, J. (Eds.), *Handbook of transdisciplinary research*, Springer, S.I., pp. 43–62.
- Miller, G. (2001): The development of indicators for sustainable tourism: results of a Delphi survey of tourism researchers, *Tourism Management*, Vol. 22 No. 4, pp. 351–362.
- Miller, G. and Torres-Delgado, A. (2023): Measuring sustainable tourism: a state of the art review of sustainable tourism indicators, *Journal of Sustainable Tourism*, Vol. 31 No. 7, pp. 1483–1496.
- Miller, G., Twining-Ward, L. (2005): Monitoring for a sustainable tourism transition: The challenge of developing and using indicators, CABI Publishing, Cambridge, MA.
- Niavis, S., Papatheochari, T., Psycharis, Y., Rodriguez, J., Font, X. and Martinez Codina, A. (2019): Conceptualising Tourism Sustainability and Operationalising Its Assessment:

- Evidence from a Mediterranean Community of Projects, *Sustainability*, Vol. 11 No. 15, p. 4042.
- Önder, I., Wöber, K. and Zekan, B. (2017): Towards a sustainable urban tourism development in Europe, *Tourism Economics*, Vol. 23 No. 2, pp. 243–259.
- Opitz-Stapleton, S., Nadin, R. and Kellett, J. and Calderone, M. and Quevedo, A., Peters, K., et al. (2019): Risk-informed development. From crisis to resilience, Research Report, available at: <https://odi.org/en/publications/risk-informed-development-from-crisis-to-resilience/>.
- Orchiston, C. and Higham, J. (2016): Knowledge management and tourism recovery (de)marketing: the Christchurch earthquakes 2010–2011, *Current Issues in Tourism*, Vol. 19 No. 1, pp. 64–84.
- Orchiston, C., Prayag, G. and Brown, C. (2016): Organizational resilience in the tourism sector, *Annals of Tourism Research*, Vol. 56, pp. 145–148.
- Parkins, J.R., Stedman, R.C. and Varghese, J. (2001): Moving towards local-level indicators of sustainability in forest-based communities: A mixed-method approach, *Social Indicators Research*, Vol. 56 No. 1, pp. 43–72.
- Pärli, R., Fischer, M. and Lieberherr, E. (2022): What are the effects of transdisciplinary research projects in the global North and South? A comparative analysis, *Current Research in Environmental Sustainability*, Vol. 4, p. 100180.
- Pérez, V., Guerrero, F., González, M., Pérez, F. and Caballero, R. (2013): Composite indicator for the assessment of sustainability: The case of Cuban nature-based tourism destinations, *Ecological Indicators*, Vol. 29, pp. 316–324.
- Pernecky, T. (2023): Kinmaking: toward more-than-tourism (studies), *Tourism Recreation Research*, Vol. 48 No. 4, pp. 558–568.
- Pope, J., Annandale, D. and Morrison-Saunders, A. (2004): Conceptualising sustainability assessment, *Environmental Impact Assessment Review*, Vol. 24 No. 6, pp. 595–616.
- Posch, E.L., Eckert, E. and Thiebes, B. (n.y.): Towards a future conceptualisation of destination resilience: exploring the role of actors, agency and resilience narratives. (accepted manuscript).
- Posch, E.L., Höferl, K.M., Steiger, R. and Bell, R. (2021): Another take on reframing resilience as agency: The agency toward resilience (ATR) model, in Santos, P.P., Chmutina, K., Von Meding, J. and Raju, E. (Ed.), *Understanding Disaster Risk: A Multidimensional Approach*, Elsevier, Cambridge, MA, pp. 239–255.
- Postma, A. and Yeoman, I.S. (2021): A systems perspective as a tool to understand disruption in travel and tourism, *Journal of Tourism Futures*, Vol. 7 No. 1, pp. 67–77.
- Prayag, G. (2018): Symbiotic relationship or not? Understanding resilience and crisis management in tourism, *Tourism Management Perspectives*, Vol. 25, pp. 133–135.

- Prayag, G. (2023): Tourism resilience in the 'new normal': Beyond jingle and jangle fallacies?, *Journal of Hospitality and Tourism Management*, Vol. 54, pp. 513–520.
- Pulido-Fernández, J.I. and Rivero, M.S. (2009): Measuring Tourism Sustainability: Proposal for a Composite Index, *Tourism Economics*, Vol. 15 No. 2, pp. 277–296.
- Pyke, J., Lindsay-Smith, G., Gamage, A., Shaikh, S., van Nguyen, K., Lacy, T. de and Porter, C. (2021): Building destination resilience to multiple crises to secure tourism's future, *Asia Pacific Journal of Tourism Research*, Vol. 26 No. 11, pp. 1225–1243.
- Quinlan, A.E., Berbés-Blázquez, M., Haider, L.J. and Peterson, G.D. (2016): Measuring and assessing resilience: broadening understanding through multiple disciplinary perspectives, *Journal of Applied Ecology*, Vol. 53 No. 3, pp. 677–687.
- Ramos, T.B. (2019): Sustainability Assessment: Exploring the Frontiers and Paradigms of Indicator Approaches, *Sustainability*, Vol. 11 No. 3, p. 824.
- Rasoolimanesh, S.M., Ramakrishna, S., Hall, C.M., Esfandiar, K. and Seyfi, S. (2020): A systematic scoping review of sustainable tourism indicators in relation to the sustainable development goals, *Journal of Sustainable Tourism*, pp. 1–21.
- Reed, M.S., Fraser, E.D. and Dougill, A.J. (2006): An adaptive learning process for developing and applying sustainability indicators with local communities, *Ecological Economics*, Vol. 59 No. 4, pp. 406–418.
- Reihanian, A., Hin, T.W., Kahrom, E. and Binti Mahmood, N.Z. (2015): A framework for implementing sustainable tourism in national parks of Iran: development and use of sustainable tourism indicators in Boujagh National Park, Iran, *Caspian Journal of Environmental Sciences*, Vol. 13 No. 1, pp. 41–52.
- Reihlen, M. (2021): Qualitative Research Methods. Study Course Script from lecture at Leuphana University Lüneburg.
- Reyers, B., Moore, M.-L., Haider, L.J. and Schlüter, M. (2022): The contributions of resilience to reshaping sustainable development, *Nature Sustainability*, Vol. 5 No. 8, pp. 657–664.
- Richey, J.S., Mar, B.W. and Horner, R.R. (1985): The Delphi Technique in Environmental Assessment, *Journal of Environmental Management*, Vol. 21 No. 2, pp. 135–159.
- Roberts, S. and Tribe, J. (2008): Sustainability Indicators for Small Tourism Enterprises – An Exploratory Perspective, *Journal of Sustainable Tourism*, Vol. 16 No. 5, p. 575.
- Ruiz-Ballesteros, E. (2011): Social-ecological resilience and community-based tourism, *Tourism Management*, Vol. 32 No. 3, pp. 655–666.
- Saarinen, J. (2014): Critical Sustainability: Setting the Limits to Growth and Responsibility in Tourism, *Sustainability*, Vol. 6 No. 1, pp. 1–17.
- Saarinen, J. and Gill, A.M. (2019): Tourism, resilience, and governance strategies in the transition towards sustainability, in Saarinen, J. and Gill, A.M. (Eds.), *Resilient destinations and tourism: Governance strategies in the transition towards sustainability in*

- tourism, Routledge studies in contemporary geographies of leisure, tourism and mobility*, Routledge, London, pp. 15–33.
- Sarkki, S., Heikkinen, H.I. and Karjalainen, T.P. (2013): Sensitivity in transdisciplinary projects: A case of reindeer management in Finland, *Land Use Policy*, Vol. 34, pp. 183–192.
- Schianetz, K. and Kavanagh, L. (2008): Sustainability Indicators for Tourism Destinations: A Complex Adaptive Systems Approach Using Systemic Indicator Systems, *Journal of Sustainable Tourism*, Vol. 16 No. 6, pp. 601–628.
- Schianetz, K., Kavanagh, L. and Lockington, D. (2007): Concepts and Tools for Comprehensive Sustainability Assessments for Tourism Destinations: A Comparative Review, *Journal of Sustainable Tourism*, Vol. 15 No. 4, pp. 369–389.
- Sinclair, A.J., Diduck, A.P. and Vespa, M. (2015): Public participation in sustainability assessment: essential elements, practical challenges and emerging directions, in Morrison-Saunders, A., Pope, J. and Bond, A. (Eds.), *Handbook of sustainability assessment*, Edward Elgar Publishing, Cheltenham, UK, pp. 349–374.
- Singh, R.K., Murty, H.R., Gupta, S.K. and Dikshit, A.K. (2009): An overview of sustainability assessment methodologies, *Ecological Indicators*, Vol. 9 No. 2, pp. 189–212.
- Stafford-Smith, M., Griggs, D., Gaffney, O., Ullah, F., Reyers, B., Kanie, N., Stigson, B., Shrivastava, P., Leach, M. and O'Connell, D. (2017): Integration: the key to implementing the Sustainable Development Goals, *Sustainability science*, Vol. 12 No. 6, pp. 911–919.
- Thaler, T., Clar, C., Junger, L. and Nordbeck, R. (2021): Opportunities and challenges for transdisciplinary research in flood risk management: some critical reflections and lessons learnt for research on sustainability, *eco.mont (Journal on Protected Mountain Areas Research)*, Vol. 13 No. 2, pp. 42–47.
- Thomas, D.S.G. and Twyman, C. (2004): Good or bad rangeland? Hybrid knowledge, science, and local understandings of vegetation dynamics in the Kalahari, *Land Degradation & Development*, Vol. 15 No. 3, pp. 215–231.
- Torres-Delgado, A. and Palomeque, F.L. (2014): Measuring sustainable tourism at the municipal level, *Annals of Tourism Research*, Vol. 49, pp. 122–137.
- Torres-Delgado, A. and Saarinen, J. (2014): Using indicators to assess sustainable tourism development: a review, *Tourism Geographies*, Vol. 16 No. 1, pp. 31–47.
- Tribe, J. (1997): The indiscipline of tourism, *Annals of Tourism Research*, Vol. 24 No. 3, pp. 638–657.
- Tudorache, D., Simon, T., Frenț, C. and Musteață-Pavel, M. (2017): Difficulties and Challenges in Applying the European Tourism Indicators System (ETIS) for Sustainable Tourist Destinations: The Case of Brașov County in the Romanian Carpathians, *Sustainability*, Vol. 9 No. 10, p. 1879.

- Twining-Ward, L. and Butler, R. (2002): Implementing STD on a Small Island: Development and Use of Sustainable Tourism Development Indicators in Samoa, *Journal of Sustainable Tourism*, Vol. 10 No. 5, pp. 363–387.
- UN (2015): Transforming our World: The 2030 Agenda for Sustainable Development, New York, available at: <https://sdgs.un.org/2030agenda>.
- UNDRR (2015): Sendai Framework for Disaster Risk Reduction 2015 - 2030. 2015-2030, available at: https://www.preventionweb.net/files/43291_sendaiframeworkfordrren.pdf.
- UNEP (2005): Making Tourism more Sustainable: A Guide for Policy Makers, available at: <https://wedocs.unep.org/20.500.11822/8741>.
- UNFCCC (2015): Adoption of the Paris Agreement, Paris, available at: <https://unfccc.int/documents/9064>.
- United Nations (2020): UN Common Guidance on Helping Build Resilient Societies, available at: <https://unsdg.un.org/sites/default/files/2021-09/UN-Resilience-Guidance-Final-Sept.pdf>.
- United Nations Habitat (2021): City Resilience Profiling Tool, available at: <https://urbanresiliencehub.org/wp-content/uploads/2018/02/CRPT-Guide.pdf>.
- UNWTO (2020): Measuring the Sustainability of Tourism, available at: <https://webunwto.s3.eu-west-1.amazonaws.com/s3fs-public/2020-06/MST-Brochure.pdf> (accessed 25 February 2021).
- UNWTO (2023): Statistical Framework for Measuring the Sustainability of Tourism (SF-MST) [Draft prepared for Global Consultation], available at: https://webunwto.s3.eu-west-1.amazonaws.com/s3fs-public/2023-10/SF-MST_complete_version_OCT2023_cover03.pdf.
- Volgger, M., Erschbamer, G. and Pechlaner, H. (2021): Destination design: New perspectives for tourism destination development, *Journal of Destination Marketing & Management*, Vol. 19, p. 100561.
- Waas, T., Hugé, J., Block, T., Wright, T., Benitez-Capistros, F. and Verbruggen, A. (2014): Sustainability Assessment and Indicators: Tools in a Decision-Making Strategy for Sustainable Development, *Sustainability*, Vol. 6 No. 9, pp. 5512–5534.
- Waligo, V.M., Clarke, J. and Hawkins, R. (2013): Implementing sustainable tourism: A multi-stakeholder involvement management framework, *Tourism Management*, Vol. 36, pp. 342–353.
- Wallerstein, R.S. (2009): What kind of research in psychoanalytic science?, *The International journal of psycho-analysis*, Vol. 90 No. 1, pp. 109–133.
- Walton, J. (1992): Making the theoretical case, in Ragin, C.C. and Becker, H.S. (Eds.), *What is a Case?: Exploring the foundations of social inquiry*, Cambridge University Press, Cambridge, UK, pp. 121–137.

- Weber, F., Egli, F. and Meier-Crameri, U., Stettler, J. (2019): *Measuring Overtourism: Indicators for Overtourism: Challenges and Opportunities: Report*, Lucerne University of Applied Sciences and Arts, Switzerland.
- Whetten, D. (2009): Modeling Theoretical Propositions, in Huff, A.S. (Ed.), *Designing research for publication*, Sage Publ, Los Angeles.
- Wong, C. (2006): *Indicators for urban and regional planning: The interplay of policy and methods*, Vol. 11, Routledge, London.
- Xin, S., Tribe, J. and Chambers, D. (2013): Conceptual research in tourism, *Annals of Tourism Research*, Vol. 41, pp. 66–88.
- Yin, R.K. (1994): *Case study research: Design and methods*, 2nd ed., Sage Publications, Thousand Oaks, CA.
- Yin, R.K. (2003): *Case Study Research: Design and Methods*, Vol. 5, 3rd. ed., SAGE, Thousand Oaks, CA.

Annex

- I. Exemplary excerpts from data collection in Windhoek, Namibia
- II. Declaration of authorship
- III. Eckert, E. & Hartmann, R. (2020): Measuring sustainability in tourism destinations: Adaptation of indicator sets to local conditions illustrated by the example of Windhoek, Namibia, *Journal of Tourism Science*, Vol. 12, No. 3, pp. 370-390
- IV. Eckert, E. (2022): Reconciling scientific, political and participatory perspectives on sustainable tourism indicator development for destination sustainability assessment, *Tourism Planning & Development*
- V. Posch, E.; Eckert, E. & Thiebes, B. (n.y.): Towards a future conceptualisation of destination resilience: Exploring the role of actors, agency and resilience narratives [accepted for publication in the *Journal of Tourism Futures*]
- VI. Eckert, E. & Posch, E. (n.y.): From Global Frameworks to Local Meanings: Building Resilience for Sustainable Destinations, in Pillmayer, M.; Hansen, M.; Karl, M. (Eds.), *Tourism destination development: A geographic perspective on destination management and tourist demand*, De Gruyter, Oldenbourg, Germany [published]

Exemplary excerpts from data collection in Windhoek, Namibia (Article 1)

Excerpts from interview guidelines

1. Does the City of Windhoek offer a programme assisting enterprises to measure, monitor and minimize water usage? (Interview Department of Environment)
2. Does the City of Windhoek have a management system in place to monitor and publicly report drinking water and recreational water quality? (Interview Department of Environment)
3. Does the City of Windhoek organize any programmes in communities, schools and higher education institutions to raise awareness of the tourism's role and potential contribution to the community? (Interview City of Windhoek Tourism Department)
4. Does the City of Windhoek offer any programmes for enterprises, visitors, and the public to contribute donations to community and/ or infrastructure development? (Interview City of Windhoek Tourism Department)
5. Does the City of Windhoek collect data on resident expectations, concerns and satisfaction with the destination management? (Interview City of Windhoek Tourism Department)
 - a. If so, how often is this done? / Is this publicly reported?

Excerpts from visitor survey guideline

Which site(s) did you visit during your stay in Windhoek?

- | | |
|---|--|
| <input type="checkbox"/> Christ Church | <input type="checkbox"/> Independence Memorial Museum |
| <input type="checkbox"/> Tintenpalast (Parliament Building) | <input type="checkbox"/> Trans-Namib Transport Museum |
| <input type="checkbox"/> Heroes Acre | <input type="checkbox"/> Zoo Park |
| <input type="checkbox"/> Owela Museum | <input type="checkbox"/> Daan Viljoen Nature Reserve |
| <input type="checkbox"/> Namibia Craft Center (Old Brewery) | <input type="checkbox"/> Old Windhoek Cemetery |
| <input type="checkbox"/> Alte Feste | <input type="checkbox"/> St Mary's Cathedral |
| <input type="checkbox"/> Katatura | <input type="checkbox"/> Turnhalle Building |
| <input type="checkbox"/> Windhoek Railway Station | <input type="checkbox"/> National Art Gallery of Namibia |
| <input type="checkbox"/> Other: _____ | |

Did you feel like having enough historic background information when visiting these sites?

- Yes No

Comments: _____

Are you aware of any programs for visitors to contribute donations to the community and/ or infrastructure development? (e.g. trusts or public funds)

- Yes No

Comments: _____

Excerpts from resident survey guideline

Do you know of any programs held in communities, schools and higher education institutions that raise awareness about the role of tourism and its contribution to Windhoek?

Yes No

Comments: _____

Please rate the following statements on a scale of 1-5 according to your own opinion:

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I feel like our own cultural heritage is underrepresented in the city of Windhoek concerning tourist attractions.	1	2	3	4	5
Tourism in Windhoek affects my living conditions in a negative way.	1	2	3	4	5

Most historically or culturally sensitive touristic sites have a code of conduct (minimum dress code, photographic protocol, donations, etiquette) for visitors. Are you aware of any involvement from the people of Windhoek in setting up these codes of conduct for touristic sites in Windhoek?

Yes No

Comments: _____

Excerpts from observation checklists

Hotels and restaurants

B6.3 Share of tourism enterprises communicating the availability of local products and services in the area to guests	<input type="checkbox"/> The enterprise does not communicate the availability of local products or services in the area to guest	<input type="checkbox"/> The enterprise communicates the availability of local products or services in the area to guest		
D3.3 Share of tourism enterprises taking actions to reduce water consumption	<input type="checkbox"/> Clearly visible information & signs on display for both tourists and staff that effectively increase awareness about water conservation	<input type="checkbox"/> Water saving devices in toilets such as dual-flush mechanism, brick in cistern	<input type="checkbox"/> Taps or infrared sensors on hand taps in public spaces	<input type="checkbox"/> Dry or natural garden with no need for watering (if not so: watering the garden only at night)

Tourist attractions

C2.1 Share of sensitive touristic sites, that have a cultural and environmental code of conduct for visitor behaviour in place (minimum dress code, photographic protocol, donations, etiquette)	<input type="checkbox"/> No code of conducts in place	<input type="checkbox"/> Code of conduct in place	
C3.5 Historical and political background information at sensitive sites is provided	<input type="checkbox"/> No information is provided.	<input type="checkbox"/> Information is provided.	
C4.6 Access to culturally and historically important or heritage sites for residents	<input type="checkbox"/> No differentiated pricing strategy	<input type="checkbox"/> Discounted access to site for residents	<input type="checkbox"/> Free access to site for residents

Declaration of authorship

I hereby declare that the dissertation submitted is my own unaided work. All direct or indirect sources used are acknowledged as references.

I have not submitted the work in the same or a similar form to any other examination authority. I consent that this work may be checked with anti-plagiarism software.

Elena Eckert

Bremen, 20.12.2023

Name, surname

Place, date

Signature

Out of the four contributions of this cumulative dissertation, three contributions have been written with co-authors. In the following, the doctoral candidate's own contribution will be presented. The categories of the Contributor Roles Taxonomy (CRe-diT) are used to document the respective contribution of the doctoral candidate. As per the CRediT guidelines, the degree of contribution will be specified as 'lead', 'equal', or 'supporting'. The fair representation of the contributions is confirmed by the co-authors through their signatures.

Contribution 1: Eckert and Hartmann (2020)

Eckert, E. & Hartmann, R. (2020): Measuring sustainability in tourism destinations: Adaptation of indicator sets to local conditions illustrated by the example of Windhoek, Namibia; Journal of Tourism Science, Vol. 12, 3, pp. 370-390, DOI: 10.1515/tw-2020-0019

CRedit	Degree of Contribution
Conceptualization	equal
Data curation	n/a
Formal Analysis	lead
Funding acquisition	supporting
Investigation	lead
Methodology	lead
Project administration	equal
Resources	supporting
Software	n/a
Supervision	supporting
Validation	equal
Visualization	lead
Writing – original draft	lead
Writing – review & editing	equal

Prof. Dr. Rainer Hartmann

Bremen, 20.12.2023

Name, surname

Place, date

Signature

Contribution 2: Posch, Eckert and Thiebes (n.y.)

Posch, E.; Eckert, E. & Thiebes, B. (n.y.): Towards a future conceptualisation of destination resilience: exploring the role of actors, agency and resilience narratives [accepted for revisions in the Journal of Tourism Futures]

CRedit	Degree of Contribution
Conceptualization	lead
Data curation	n/a
Formal Analysis	lead
Funding acquisition	supporting
Investigation	lead
Methodology	equal
Project administration	lead
Resources	supporting
Software	n/a
Supervision	supporting
Validation	equal
Visualization	lead
Writing – original draft	lead
Writing – review & editing	lead

Eva Posch

17.12.2021 Innsbruck

Name, surname

Place, date

Signature

Dr. Thiebes, Benni

Bonn, 19.12.2023

Name, surname

Place, date

Signature

Contribution 3: Eckert and Posch (n.y.)

Eckert, E. & Posch, E. (n.y.): From Global Frameworks to Local Meanings: Building Resilience for Sustainable Destinations. In Pillmayer, M.; Hansen, M.; Karl, M. (Ed.), Tourism destination development: A geographic perspective on destination management and tourist demand. De Gruyter Oldenbourg [accepted for publication]

CRedit	Degree of Contribution
Conceptualization	equal
Data curation	n/a
Formal Analysis	equal
Funding acquisition	supporting
Investigation	equal
Methodology	equal
Project administration	equal
Resources	equal
Software	n/a
Supervision	n/a
Validation	equal
Visualization	equal
Writing – original draft	equal
Writing – review & editing	equal

Eva Posch

17.12.2021 Innsbruck

Name, surname

Place, date

Signature

Elena Eckert and Rainer Hartmann*

Measuring sustainability in tourism destinations

Adaptation of indicator sets to local conditions
illustrated by the example of Windhoek, Namibia

<https://doi.org/10.1515/tw-2020-0019>

Abstract: The aim of this paper is to examine how the sustainability assessment of a tourism destination can be carried out while taking local conditions into account. The fact that every destination has its own features is often disregarded and a general set of sustainability indicators is used to measure sustainability in all tourism destinations. The question is, if imposing a universal system on destinations with particular features will inevitably result in a superficial analysis that disregards the specific local circumstances. The focus of this paper therefore lies in discussing approaches, opportunities, risks and challenges for the addition of contextual features into the destination assessment process. The paper is based on a case study conducted in Windhoek, Namibia. Central findings are, that the extent to which the indicator set needs to be adapted depends on the purpose of the assessment and on the characteristics of the destination. Recommendations and a refinement of the assessment methodology for the evaluation of sustainability in destinations with different local conditions are provided.

Keywords: sustainable tourism, sustainability assessment, sustainable tourism indicators, Windhoek/Namibia

1 Introduction: Measuring Sustainability

The global priorities for the 2030 Agenda are defined in the UN sustainable development goals (SDGs). Among others they identify the sustainable design of cities and communities, poverty reduction, equal opportunity and sustainable economic growth as goals to be achieved by 2030 (United Nations 2018). Tourism is often seen as a catalyst for this development which is why sustainable

*Corresponding author: Prof. Dr. Rainer Hartmann, Hochschule Bremen, Germany,
E-Mail: rainer.hartmann@hs-bremen.de

Elena Eckert, Leuphana Universität Lüneburg, Germany, E-Mail: elena.eckert@googlemail.com

development in tourism destinations has been part of the academic discourse for a while. Especially the assessment and certification of destinations using sustainable tourism indicators (STIs) is a central subject. “The number of certifications by destinations has been increasing significantly over the past few years, mainly driven by the adaptation of standards and guidelines designed by the Global Sustainable Tourism Council (GSTC)” (Costa et al. 2019, p. 682). There is a high volume of scientific literature that discusses measuring approaches for sustainable tourism, namely the selection and weighting of sustainability indicators (Kristjánssdóttir et al. 2018; Mikulić et al. 2014; Miller and Twining-Ward 2005; Schianetz et al. 2007; Sirakaya et al. 2001; White et al. 2006). Moreover, a vast number of frameworks with proposals for sustainability indicators in tourism destinations already exists (GSTC, Green Destinations, Biosphere, Earth Check etc). Sustainability sciences and economic sciences have concentrated on the trade-off between top-down and bottom-up approaches for the development of indicator systems. Academic, policy-maker and community approaches are exemplified by the incompatibilities between developing scientifically relevant but too complex STIs, acting based on national policy development and facilitating community involvement (Crabtree and Bayfield 1998; Gkoumas 2019; Marzo-Navarro et al. 2015; Tanguay et al. 2013). Yet there is a gap in the literature in terms of the adaptation of existing sustainability indicators to local circumstances. Twining-Ward and Butler (2002) stress that “when thinking about sustainable tourism we should not necessarily assume that the issues are the same in different destinations or in different tourist activities, thereby highlighting the importance of context for the design and use of sustainable tourism indicators” (Twining-Ward and Butler 2002 in: Torres-Delgado and Saarinen 2014, p. 43). Although academia has long recognised the necessity to design flexible STIs, their practical adaptation to a multitude of spatial scales and types of destinations is still rare and mostly limited to site-specific case studies (Cernat and Gourdon 2012; Laws et al. 2003; Niavis et al. 2019; Rasoolimanesh et al. 2020).

This paper aims to elaborate further on the issue of finding a balance between global acceptance and local relevance for the assessment of sustainability in tourism destinations. It has long been known, that “at the national level, sustainability indicators are selected for international comparison and to provide a basis for national policy development” (Crabtree and Bayfield 1998, p. 2). National policies aim at supporting long-term strategies and enable annual comparisons. At local level however, “indicators will generally be selected to inform on local sustainability issues” (Crabtree and Bayfield 1998, p. 2). Torres-Delgado and Saarinen (2014) state that “indicators of sustainability have been widely adopted in tourism planning and management, and the indicator type (set or index) is selected depending on the situation under analysis and the purpose underpin-

ning the study” (Torres-Delgado and Saarinen 2014, p. 31). They encourage to focus on achieving practical application of indicators by overcoming “strategic guidelines and political and theoretical proposals of indicators” (Torres-Delgado and Saarinen 2014, p. 44).

This paper aims to evaluate further how a sustainability assessment for tourism destinations can be carried out, taking local conditions into account. The research is based on a case study of a sustainability assessment of the City of Windhoek in Namibia. As described, the fact that every destination has its own prominent features is often disregarded and a general indicator set, which is often western-centric and fails to acknowledge local circumstances in developing nations, is used (Bello et al. 2016). The focus of this study therefore lies in analysing how local conditions can be added into the sustainability assessment. Furthermore, opportunities, risks and challenges for the adaptation process are discussed.

2 The Windhoek case study

This paper is based on the results and experiences of a case study that was conducted in Windhoek, the capital of Namibia.

The country in Southern Africa has one of the most extreme inequalities of wealth in the world. This can be attributed to Namibia’s colonial heritage and the years under the South African apartheid regime, where wealth was transferred to a limited group of people while the vast number of Namibians were oppressed and deprived of their rights and property. Most of the population is still trapped in the cycle of economic inequality created by apartheid. Insufficient education and limited resources led to weak participation in tourism business and profits which in turn consolidated the poor starting conditions (Rodrian 2009). According to the Development Assistance Committee (DAC), Namibia qualifies as an *Upper Middle Income Country* as per the DAC list of ODA-eligible (Official Development Assistance) countries (OECD 2018). Namibia has a Human Development Index (HDI) of 0.647, putting the country in the *medium* human development bracket (UN Development Programme 2019). Based on the most recent data from 2015, Namibia has one of the highest Gini coefficients in the world at 59.1 (The World Bank 2020). The division between rich and poor Namibians is still strongly determined by origin and the unresolved issues of land ownership. To this day, society is influenced by the unequal distribution caused by the historical development of income patterns (Eckert 2020).

Since its independence, Namibia has recorded a strong increase in tourist arrivals. The contribution of travel and tourism to total employment amounted

to 15.7% in 2019. In the same year, the total contribution of travel and tourism to the GDP reached 10.9% (WTTC 2019, p. 1). The capital Windhoek is visited by 70% of all holiday tourists (Ministry of Environment and Tourism 2013, p. 21). Tourism therefore also constitutes an integral part for business activity in Windhoek. However, Windhoek faces a number of difficulties in the pursue of getting tourists to spend more time and money in the city before heading off to explore the rest of the country. The vast majority of tourism businesses is owned and run by Non-Namibians. These ownership and participation structures have been manifested over years which results in little benefit from tourism for local residents. Especially residents of disadvantaged city areas hardly get in touch with the tourism product (Eckert 2020). In summary, the in-depth literature analysis covering the economic, ecological and socio-political circumstances in Windhoek resulted in the identification of the following structural deficiencies: 1) strong social inequality, 2) historically grown ownership structures due to colonisation and apartheid, 3) extreme climatic conditions/scarcity of water and 4) limited infrastructural development. These conditions and their resulting consequences form the basis for the adaptation of the indicator set.

3 Approaches to sustainability assessment in tourism destinations

In recent years, tourism researchers and tourism organisations have advocated and discussed the use of indicators for the monitoring of sustainable tourism (Schianetz and Kavanagh 2008, p. 603). This is why, various approaches for the assessment of sustainable tourism have been developed (Baumgartner 2008; Choi and Sirakaya 2006; Miller 2001; Miller and Twining-Ward 2005; Schianetz et al. 2007). The majority of systems use a set of criteria and indicators that assess the performance of a destination or tourism business on the basis of indicators in the four dimensions of sustainability (management, economic, socio-cultural and ecological dimension). As several approaches for the evaluation of sustainable tourism are discussed in the tourism literature, numerous indicator sets have already formed part of the scientific understanding (Gkoumas 2019; Kristjánsdóttir et al. 2018). Among these, the most widely recognised set of indicators are the GSTC, which “are the guiding principles and minimum requirements that any tourism business or destination should aspire to reach in order to protect and sustain the world’s natural and cultural resources, while ensuring tourism meets its potential as a tool for conservation and poverty alleviation“ (GSTC 2020). Apart from the GSTC, the European Commission has developed the European Tourism Indicator System (ETIS). More-

over, a number of private certification businesses and parastatal organisations have developed various labels, certifications and management tools for destinations (Green Destinations, Biosphere, Earth Check, Ecotourism Australia, Kenya Green Destinations, Sustainable Destination Norway etc.).

Basing the sustainability assessment of the City of Windhoek on just one of the existing indicator sets proves to be unsuitable as every destination has its own specific features. A system that might work well in countries of the Global North cannot just be imposed on a Southern African tourism destination (Eckert 2020). As described, the indicator set for this study is adapted from the global standard to suit the environment in the destination. Further information on the adaptation process can be found in the following paragraph. The assessment framework is closely based on the GSTC destination criteria while taking into account recommendations for the local circumstances from the indicators of Fair-Trade Tourism South Africa¹ and Eco Awards Namibia². Locally relevant topics such as policies on indigenous rights, the acquisition of land and on water consumption were elaborated specifically in these initiatives and therefore incorporated into the set of STIs for the case study.

Methodology of the sustainability assessment

The principal objective for the sustainability assessment is the long-term development of sustainable tourism. The UNWTO and UNEP have identified 12 aims for sustainable tourism which endeavour to deliver “economic benefits to destinations and communities, through competitive, viable tourism businesses that create employment, as about minimising adverse impacts on the environment” (UNWTO 2013, p. 19). For the evaluation, an overall objective is set for each of the four dimensions of sustainability. This goal is then broken down into criteria and indicators that operationalise the measures for achieving said objectives. The following figure 1 exemplifies the hierarchical framework for the set-up of criteria and indicators in the assessment instrument.

Indicators define the criteria with quantitative or qualitative parameters (Hartmann and Stecker 2020, p. 83). When selecting indicators, the wording, the form of measurement and the feasibility are particularly important. The search for a ‘perfect’ indicator (set) is its own field of study on which much research has been conducted (Lammerts van Bueren and Blom 1996; Pulido-Fernández

1 www.fairtrade.travel (last accessed 14.05.2020)

2 www.ecoawards-namibia.org (last accessed 14.05.2020)

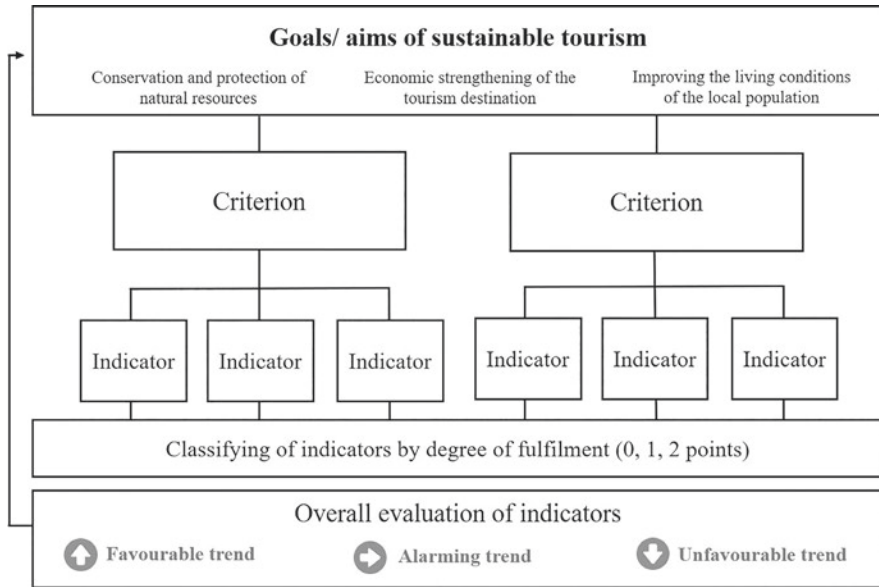


Figure 1: Hierarchical framework for criteria and indicators of sustainable tourism (Source: Own figure based on Stecker 2010)

et al. 2009; Sirakaya et al. 2001; White et al. 2006). Either way, all indicators require constant review and updating over time, because of their dynamic nature (White et al. 2006, p. 7). The establishment of the assessment framework is based on the three requirements of reliability, validity and objectivity (Hartmann and Stecker 2020).

Indicators of particular relevance for the sustainable development of tourism in Windhoek are selected to serve as core indicators. Consequently, these are weighted twice in the final evaluation. Examples for such significant indicators are a code of conduct for visitors at culturally or environmentally sensitive sites, the monitoring of visitor and resident satisfaction or the existence of programmes to raise awareness for water consumption issues. Concerning the weighting Mikulić et al. (2014) stress that indicator levels can vary significantly between multiple destinations. The weighting procedure must consider sustainability indicators for each destination separately (Mikulić et al. 2014, p. 313).

Each indicator is rated based on an individually assigned norm. The norm is a reference value which is based on international standards and best practices discussed in the current scientific tourism literature (Stecker and Hartmann 2019, p. 376). Depending on their compliance with the norm, indicators can then be classified by using a rating system of zero, one or two points.

Norms can be of a qualitative or quantitative nature, yet they must always be well-formulated and clearly defined. For a quantitative indicator such as *Share of the destination's events focused on traditional or local culture and heritage*³ a norm can be *Share is below 50 %* (0 points), *Share is between 50–75 %* (1 point) and *Share is above 75 %* (2 points). For a qualitative indicator such as *Taxi licensing system with clear pricing and an organized taxi dispatch system at points of visitor entry*⁴ a norm can be *The taxi licensing system is unclear and unorganized not following uniform standards* (0 points), *There is a uniform standard, however pricing and dispatching are unclear and do not function accordingly* (1 point), *The taxi licensing system is clear and organized at all POIs and points of visitor entry* (2 points).

The indicators are rated based on various methods of data collection. This multi-dimensional approach is called triangulation (Hartmann and Stecker 2020). The term refers to the “use of multiple methods or data sources in qualitative research to develop a comprehensive understanding of phenomena” (Carter et al. 2014, p. 545). In a final step, a so-called *verifier*, which indicates the respective method of data collection, is assigned to each indicator. For this study, an indicator set was established as per the hierarchical framework explained above. The establishment and the adaptation of the STIs to the local conditions took place **before** the field trip for the sustainability assessment of Windhoek was undertaken.

The aforementioned adaptation was carried out on the basis of the secondary data analysis and in dialogue with the responsible officials from Windhoek. In order to identify locally relevant factors, the researchers examine economic, social, environmental, historic and political issues specific to the destination and identify where noticeable irregularities or deviations from the global understanding can be observed. Önder et al. (2017) recommend to zoom into destination level in order to discover relevant information rather than to rely on centralised nationwide proposals. In addition, one looks for structural disadvantages in the destination which might influence smooth tourism operations. Castellani and Sala (2010) suggest to conduct an economic, social, cultural and environmental diagnosis of the destination that highlights its most critical issues. Tudorache et al. (2017) propose the identification of “peculiarities of each destination” in order to select relevant indicators (Tudorache et al. 2017, p.11).

The challenge lies in determining at what point a factor is so decisive, that it requires special consideration in the assessment framework. In the case of

3 ETIS Destination Criteria 2016, IN-C.5.2

4 GSTC Destination Criteria 2013, IN-A12.d.

Windhoek, the following four aspects were considered to be of such relevance: 1) strong social inequality, 2) historically grown ownership structures due to colonisation and apartheid, 3) extreme climatic conditions/scarcity of water and 4) limited infrastructural development. Based on the conclusions drawn from this analysis, the integration of new indicators and alteration of existing ones into the assessment framework took place. Lastly, it has to be noted that „...there is no single ‘perfect’ set of indicators; each user will have their own ideal set dependent upon what uses they intend for the information. Any selection of indicators is bound to be subjective in nature and therefore open to criticism“ (Roberts and Tribe 2008, p. 580).

The specific recommendations for the adaptation of the indicator set are explained in the next paragraph. All of them are based on the findings of secondary research and the results of primary research carried out in Windhoek as part of the sustainability assessment. The primary research served to verify the previously defined assessment framework and to test the adequacy of the adjustment. The four main methods of data collection that were used for the sustainability assessment of Windhoek were secondary research, formal and informal expert interviews (n=9; n=17), face-to-face tourist and resident surveys (n=126; n=215) and observation at tourism points of interest (n=48). Combining these qualitative and quantitative approaches allows for a broader collection of data. Since the focus of this paper is not on the sustainability assessment conducted for Windhoek but on the adaptation of the assessment framework to the local conditions, no further elaboration on the respective data collection and analysis will take place at this point.

4 The process of adaptation of indicator sets

The following paragraph provides a list of recommended actions for the adaptation of indicator sets for sustainability assessment of tourism destinations to local conditions. The recommendations proposed by the researchers are based on the findings obtained by combining the preliminary considerations and the results of the primary research.

The two tables show the steps, the set-up of a new or adapted indicator set should be based on.

The first table considers the ‘technical’ set-up of indicator sets (T1-T8) while the second table focuses on the content of the indicators (C1-6). Each step is underpinned with the findings and considerations of the specific case of Windhoek.

Table 1: Technical considerations for the adaptation of an Indicator set (Source: Own table adapted from Eckert 2020)⁵




	<p>Basis for the indicator set</p> <p>Globally recognised framework like the GSCT should be the basis for any assessment. International standards like ETIS, EMAS or guidelines from certification programmes can be used as well. Moreover, indicator sets recognised in countries similar to the one assessed can be added.</p> <p>T1 <i>Windhoek: Eco Awards Namibia considered Australian standards because climatic conditions are alike and South African standards due to similarities in history. The researchers reviewed a variety of internationally recognised assessment framework and incorporated Eco Awards Namibia and Fair-Trade Tourism South Africa indicators for site-specific input.</i></p>
	<p>Resources for the project</p> <p>Since time and financial resources are often scarce, time-consuming and high-cost data collection is often not considered feasible by the DMO (Rein and Strasdas 2017, p. 310). Based on these considerations the size of the research team, the timeframe and the monetary resources of an assessment project need to be considered to determine the scope of the indicator set. “Given limited resources, the selection of indicators will depend on the costs involved and the perceived value of the information produced” (Crabtree and Bayfield 1998, p. 2).</p> <p>T2 <i>Windhoek: The sustainability assessment in Windhoek was part of a development cooperation project between the City of Bremen and the City of Windhoek. Funding was provided as part of this initiative. The research was carried out by the two authors and assisted by students from the Namibia University of Science and Technology. Data collection took place during a 14-day field trip.</i></p>
	<p>Choosing indicators</p> <p>When selecting indicators, it should be critically assessed which indicator is really relevant and which one is already incorporated elsewhere. The ability to measure the indicator needs to be questioned and the suitability of qualitative or quantitative must be determined. A precise and clear description and wording with no room for misinterpretation is key. Moreover, the ratio between indicators and criteria should be balanced across the four dimensions of sustainability.</p> <p>T3 <i>Windhoek: The set-up of the indicator set took place in strict compliance with a dual-control principle. Both authors individually verified the suitability, relevance, wording and ratio of indicators. At this point, it was important to have the indicator set verified by someone with local expertise.</i></p>

Table 1 (continued)




	<p>T4 Defining norms Norms are reference values based on international standards or best practices. Changing just the norm during an adaptation process can be sufficient at times rather than changing the entire indicator. It can be that the norm needs to be loosened because the destination is poorly positioned concerning certain topics. In the case of global issues however, the norm should not be loosened because certain aspects require strict norms worldwide no matter the country. <i>Windhoek: The authors decided to loosen the norm for certain indicators (e.g. locally sourced products due to climatic conditions) and maintain a global norm for others (e.g. accessibility or climate change). Other norms were established based on best-practices from other (preferably similar) countries to avoid imposing a western-centric system on a Southern African destination.</i></p>
	<p>T5 Assigning verifiers Before methods of data collection are assigned to each indicator, their availability must be reviewed. The best data collection method must be identified and a list specifying which verifiers are used for which indicator should be set up. The combination of multiple verifiers reduces bias and supports a more accurate result. <i>Windhoek: The researchers decided to assign more than one verifier per indicator to obtain comprehensive results and to reduce dependency on individual sources. In the case study, secondary research, expert interviews, tourist and resident surveys and observation at POIs were used.</i></p>
	<p>T6 Comparison with other indicator sets Comparing the own framework with examples from other countries that have similar conditions can help to evaluate if something has been disregarded. White (2006, p. 12) advocates to “use existing indicators lists as a guide and stakeholder input to refine listings to what is potentially viable”. Moreover, a comparison can reveal if the indicator is very ‘heavy’ on certain aspects and rather ‘weak’ on other aspects. Depending on the focus of the study, the priorities can then be counterbalanced. <i>Windhoek: The authors compared the indicator set to a multitude of destination-frameworks. Stakeholder consultation could have been more extensive but was limited by the time-resources on site.</i></p>

Table 1 (continued)





	T7	<p>Applicability of indicators</p> <p>Certain indicators are not always applicable. Neutralising indicators because of a lack of data or applicability is not an Issue. Relevant and sensitive topics causing conflicts however, need to be assessed, even under adverse circumstances.</p> <p><i>Windhoek: The researchers removed obsolete and non-applicable indicators from the set. Sensitive indicators such as the colonial and apartheid past, gender equality, discrimination and crime however were specifically included in the indicator set.</i></p>
	T8	<p>Development of guidelines and checklists</p> <p>When developing guidelines, surveys and checklists a clear wording is key. The survey guidelines should comprise many close-ended questions to shorten the Interview process. It should be pre-tested in order to determine potential misunderstandings. A 'no-comment' option for sensitive answers must be provided at all times.</p> <p><i>Windhoek: The guidelines, surveys and checklists were designed as per the recommendations above. A pre-test for resident and tourist surveys was conducted.</i></p>





Table 2 illustrates the considerations (C1-C6) concerning the content of the indicator set. Like before, each recommended step is illustrated with an example from the case study conducted in Windhoek.

Table 2: Content considerations for the adaptation of an indicator set using the example of Windhoek (Source: Own table adapted from Eckert 2020)⁶

	C1	<p>Definition of the research level</p> <p>Firstly, the spatial scale for the sustainability assessment needs to be defined. Some Indicator sets are created to provide global guidelines whereas others focus on continents, national, regional or local level.</p> <p><i>Windhoek: In this case study, the local level was of core interest.</i></p>
	C2	<p>Definition of the type of destination</p> <p>In a next step, the type of destination has to be identified. The most popular ones are mountains, coastal zones, Islands, wildlife or nature parks, urban environments and cultural or archaeological sites. Naturally, two different types can be combined.</p> <p><i>Windhoek: In this study an urban environment and cultural sites were the main research focus.</i></p>

⁶ Graphic elements from © Pixabay 2019

Table 2 (continued)

	<p>C3 Identification of respective circumstances Every destination has particular frame conditions. These can include history, politics, culture, religion, education, crime, infrastructure or climatic conditions. <i>Windhoek: The considerations in this study were influenced by important historic and political factors, limited infrastructure and extreme climatic conditions.</i></p>
	<p>C4 Identification of special requirements Besides the underlying frame conditions in the destination, specific local requirements and noticeable deviations need to be considered. <i>Windhoek: In the case of this study, the genocide during German reign, difficult land and water rights, indigenous rights, expropriation, unequal distribution of wealth, discrimination and a rigid owner-structure in tourism required an elevated level of carefulness concerning some indicators.</i></p>
	<p>C5 Identification of activities and attractions In order to identify potential opportunities and risks for the assessment, the main activities and attractions in the destination need to be listed. Examples are nature, sun and beach, culture and heritage, recreation, shopping, architecture or city tourism. Ideally, the cultural identity of the destination and its residents is represented by the attractions. <i>Windhoek: A list of all touristic sites and attractions was compiled. In order to verify the representation of the local population and their culture, indicators were added that compare the share of attractions related to the German colonial heritage with the share of attractions that illustrate Namibia's pre- and post-colonial history. Moreover, the perception of representation of own cultural heritage by residents and historical and political background information provided at the sites was examined.</i></p>
	<p>C6 Identification of opportunities and risks Opportunities and risks can be identified based on steps C3, C4 and C5. Potential risks are overtourism, overdependence on tourism, degradation of ecosystems, identity loss for locals or conflicts with tourists. Potential opportunities are nature and heritage conservation, poverty alleviation, capacity building, creation of employment and inclusion. <i>Windhoek: Opportunities and risks were identified as per the recommendations above. Opportunities are increased awareness of tourism's role and potential contribution, poverty reduction, improvement of infrastructure and improved resource management. A potential risk is the non-identification of residents with the tourism product, disrespectful representation of cultural heritage, visitor behaviour, accessibility and safety.</i></p>

5 Opportunities, risks and challenges for the adaptation of indicator sets

The following paragraph discusses in how far an adaptation of indicator sets can be required and which opportunities and risks it entails. Moreover, the challenges researchers can be faced with, when adapting the assessment framework, are addressed.

Identifying local conditions and translating them into the assessment can be of high relevance and importance if the assessment is carried out as part of the formulation of a new destination strategy. The DMO benefits more from an in-depth analysis of the situation on site than from an internationally comparable evaluation. Given that “sustainability indicators can more effectively contribute to a process of development that matches local priorities and engages the interests of local people” (Reed et al. 2005, p. 5). Torres-Delgado and Saarinen (2014) also argue that “calls for universal indicators may serve little purpose in practice” while warning that “local- and community-scale studies [...] may exclude some of the broader regional and especially global issues of sustainability” (Torres-Delgado and Saarinen 2014, p. 43).

Hence in view of the long-term development of the destination, the focus should be on how to improve the sustainability of the specific destination for the benefit of its local population and its tourists. Despite an adaptation of indicators to the local circumstances, a general adaptation of the assessment framework to any change in the system, the abandonment of certain indicators or the addition of new ones is required at all time (White et al. 2006, p. 12).

Destinations like Windhoek that have complex socio-cultural structures, meaningful underlying historic patterns or extreme climatic conditions call for added indicators and adapted norms.

In the case of Windhoek, a set of 70 indicators was used for the sustainability assessment. With a ratio of 6:1, around 15%-20% of all indicators were site-specific, while the rest was generally applicable to tourism destinations. Illustrative examples of the indicators selected for Windhoek, given the four specific characteristics mentioned above, are: policy or legislation that considers indigenous rights, ensures public consultation and authorizes resettlement only when there is informed consent and/or reasonable compensation⁷; share of tourism enterprises with a written policy on discrimination and the management of discrimination within the institution⁸; prioritization in the communication of heritage

⁷ GSTC Destination Criteria 2013, IN-A9.b.

⁸ Eco Awards Namibia Accommodation Criteria 2017, IN-7.15

sites related to pre- and post-colonial and apartheid history; historical and political background information at sensitive sites is provided from a multi-perspective narrative; programmes for enterprises, visitors, and the public to contribute donations to community and/or infrastructure development⁹; programmes assisting enterprises to measure, monitor and minimise water usage¹⁰ and share of tourism enterprises taking actions to reduce water consumption¹¹.

Integrating indicators like this, helped the researchers to address specific challenges in the destination and to elaborate more on certain aspects in the course of the strategic recommendations.

However, any adaptation of indicators presents certain risks and should not be undertaken lightly. Developing a tailor-made indicator set for each destination inevitably minimises the comparability of the analysis with other destinations. Another threat is that the focus is placed entirely on the local situation without applying global standards in certain areas. Topics like climate change and accessibility are global issues and require global standards. Lowering the norm for the monitoring of greenhouse gases or the number of accessible points of interest in a destination, that has a comparatively weak economic background, sends the wrong message. In the case of emerging and developing countries, a standard that has proven itself in the Global North should not be imposed on the destination, but it should rather be considered what is feasible, practicable and realistic in the destination. In this context, the focus should be on community capacity building, giving people the abilities that will allow them to achieve measurable and sustainable results. Defining a norm when local data, best practices or experiences are not available can be challenging. It is important to avoid the tendency to select indicators for which information is readily available, while accepting that other, potentially more important or useful indicators, are being overlooked (White et al. 2006, p. 13). Applying Global North standards is not helpful in this context, as it is not feasible. It is advisable to consider the situation in neighbouring countries or destinations with similar circumstances in order to determine benchmarks. In the absence of best-practices or reference conditions, historical evidence, comparison with other territories, a theoretical reference condition or stakeholder consultation for “best” and “worst” case scenarios can be used to find a norm (Bell and Morse 2003, p. 46–47).

As described, specific local requirements and noticeable deviations from a global understanding should receive special attention in the indicator set. Often,

⁹ GSTC Destination Criteria 2013, IN-B8.a.

¹⁰ GSTC Destination Criteria 2013, IN-D6.a.

¹¹ ETIS Destination Criteria 2016, IN-D5.2/Eco Awards Namibia Accommodation Criteria 2017, IN-4.4 to 4.19

however, precisely these deficiencies or problems only become apparent to the researchers in all their consequence during the analysis on site. In the case of this study, a longer period of research on site would have allowed for a more comprehensive evaluation of the indicator set before conducting the actual assessment. Important indicators such as the rigid owner and management structure of tourism businesses, the deficits in digitalisation, the development of all parts of Windhoek as one city, problems with township tourism, the extent of the climatic and infrastructure problems and various environmental aspects were not considered in the indicator set despite their importance (Eckert 2020).

With respect to the assessment, a clear wording for indicators and norms, a strict methodical approach during the assessment and assessment by only one researcher or a small team can help to limit distortions. Especially socio-cultural indicators like the communication and representation of cultural heritage entail cultural nuances and remain subject to the researchers' understanding (Eckert 2020). Despite the fact that "social indicators can prove far harder to determine and can depend solely on 'subjective' data" (White et al. 2006, p. 14), a qualitative measurement of social data might provide a better understanding of the situation in the destination, given the "socially constructed nature" of tourism (White et al. 2006, p. 15).

At this point it is worth mentioning that this method "entails a high investment in time and money for data collection. Above all, it requires a comprehensive and time-consuming survey and investigation of a destination on site" (Hartmann and Stecker 2020, p. 84).

The challenges of the adaptation of STIs will now be discussed further in view of the global-local nexus. Deciding where to draw the line between individual adaptation and global standards proves to be the most difficult task. At what point is an assessment no longer comparable, and at what point is it merely a matter of imposing a universal system on a destination with its own needs and characteristics? Torres-Delgado and Saarinen identify the challenge as "achieving coverage not only of local impacts but also of global issues" (Torres-Delgado and Saarinen 2014, p. 43–44). According to them, "proposals need to strike a balance between their contextual specificity and their global relevance" (Torres-Delgado and Saarinen 2014, p. 43). Other scholars argue, that designing an assessment framework which enables comparison among different destinations is impossible. Forcing the diverse nature of destinations into a quantitative, interregionally comparable system is not considered feasible (Baumgartner 2016; Laimer 2017). Moreover, the challenge of comparing destinations is compounded by the variety of data sources, data formats and time of data collection in each region (O'Mahony et al. 2009; Önder et al. 2017; Niavis et al. 2019).

Furthermore, the spatial scale of assessment can reduce comparability (O'Mahony et al. 2009). Data is usually collected at national or regional level and “since ecological boundaries rarely meet up with political jurisdictions, it is necessary to be flexible when choosing the scale at which monitoring and decision-making occurs” (Fraser et al. 2006, p. 114). This is why other scholars argue that indicator sets should be developed individually while having a common structure that comprises site-specific indicators (Valentin and Spangenberg 2000). The most widely adopted approach is the development of general and specific indicators. Pérez et al. (2013) use normative indicators that are common to all destinations and local indicators which are determined by the destination. Blancas et al. (2011) use key indicators for basic information on sustainability in the destination and specific/complementary indicators for destination characteristics. Tanguay et al. (2013) also advocate for the use of core indicators to ensure “a minimum level of consistency in the assessment of sustainable tourism” (Tanguay et al. 2013, p. 864). These approaches provide a solution that can help to bridge the global-local divide. Ultimately, the question of local and global norms involves balancing the relevance of individual indicators, their evaluation and the objectives of the research.

6 Conclusion

It has been recognised by the literature that tourism destinations are diverse and confronted with individual challenges. This is confirmed by the experiences from the case study, which show that the nature of destinations is highly dependent on local conditions. Nevertheless, there is a gap in the literature regarding the adaptation of sustainability indicators to local circumstances. This paper aimed to bridge that gap by providing a list of recommended actions for the adaptation of indicator sets to site-specific conditions. The recommendations are underlined with the findings and experiences from the Windhoek case study in order to increase their practical applicability. The refinement of the method can help other destinations to establish a tailor-made indicator set of their own and to enable a more holistic approach for future research.

The study advocates to treat destinations with individual characteristics separately instead of imposing a one-size-fits-all approach on them. Especially destinations in low- and middle-income countries should not be assessed with an unaltered western-centric approach, despite the fact that this might have proven itself to be purposeful in other contexts. It should rather be considered what is feasible, practicable and realistic in the specific destination.

Moreover, the trade-off between global comparability and local relevance has been discussed. The overall perception is, that there is no such thing as the one threshold where global challenges turn into local issues. Focusing on the local situation may prove to be more beneficial for the destination, even if it means accepting a loss of comparability. In fact, even with large-scale initiatives, comparability can be affected by the availability of data and the inconsistency of political and environmental boundaries. A potential solution to this problem could be the use of core indicators and site-specific indicators for sustainability assessment.

It can be concluded that adapting existing indicator sets to local conditions is useful and advisable. Nonetheless, every assessment initiative must critically question its purpose, benefit and strategic orientation in order to meet the requirements for the long-term development of sustainable tourism.

Bibliography

- Baumgartner, C. (2008): *Nachhaltigkeit im Tourismus. Von 10 Jahren Umsetzungsversuchen zu einem Bewertungssystem*. Innsbruck: StudienVerlag.
- Baumgartner, C. (2016): *Destination-oriented Assessment of Sustainability in Tourism*. Available at [https://www.responseandability.com/index.php/files/64/Studies-and-articles-/27/2016-%7C-Destination-oriented-Assessment-of-Sustainability-in-Tourism-\(English\).pdf](https://www.responseandability.com/index.php/files/64/Studies-and-articles-/27/2016-%7C-Destination-oriented-Assessment-of-Sustainability-in-Tourism-(English).pdf), last accessed 07.06.2020.
- Bell, S. and Morse, S. (2003): *Measuring sustainability: Learning by doing*, Earthscan Publications, London, Sterling, VA.
- Bello, F.G., Carr, N. and Lovelock, B. (2016): Community participation framework for protected area-based tourism planning, *Tourism Planning & Development*, Vol. 13 No. 4, p. 469–485.
- Blancas, F.J., Lozano-Oyola, M., González, M., Guerrero, F.M. and Caballero, R. (2011): How to use sustainability indicators for tourism planning: the case of rural tourism in Andalusia (Spain), *The Science of the Total Environment*, 412–413, p. 28–45.
- Carter, N., Bryant-Lukosius, D., DiCenso, A., Blythe, J., Neville, A. (2014): The use of triangulation in qualitative research, *Oncology nursing forum*, 41 (5), p. 545–547.
- Castellani, V. and Sala, S. (2010): Sustainable performance index for tourism policy development, *Tourism Management*, Vol. 31 No. 6, p. 871–880.
- Cernat, L. and Gourdon, J. (2012): Paths to success: Benchmarking cross-country sustainable tourism, *Tourism Management*, Vol. 33 No. 5, p. 1044–1056.
- Choi, H.C., Sirakaya, E. (2006): Sustainability indicators for managing community tourism, *Tourism Management*, 27, p. 1274–1289.
- Costa, J., Rodrigues, D., Gomes, J. (2019): Sustainability of tourism destinations and the importance of certification, *Worldwide Hospitality and Tourism Themes*, Vol. 11 No. 6, p. 677–684.
- Crabtree, B., Bayfield, N. (1998): Developing sustainability indicators for mountain ecosystems: a study of the Cairngorms, Scotland, *Journal of Environmental Management*, (1998) 52, p. 1–14.

- Eckert, E. (2020): Assessment of sustainable tourism development in Windhoek, Namibia. Development and implementation of an adapted criteria catalogue in line with respective local conditions. Master Thesis at University of Applied Sciences Bremen.
- Eco Awards Namibia (2017): Accommodation Establishments Criteria. Available at <http://ecoawards-namibia.org/sites/default/files/Eco%20Awards%20Namibia%20Accommodation%20Assessments%202017%20Criteria.doc>, last accessed 20.06.2020.
- European Commission (2016): The European Tourism Indicator System – ETIS toolkit for sustainable destination management. Available at <http://ec.europa.eu/DocsRoom/documents/21749/attachments/1/translations/en/renditions/pdf>, last accessed 20.06.2020.
- Fraser, E.D.G., Dougill, A.J., Mabee, W.E., Reed, M. and McAlpine, P. (2006): Bottom up and top down: analysis of participatory processes for sustainability indicator identification as a pathway to community empowerment and sustainable environmental management, *Journal of Environmental Management*, Vol. 78 No. 2, p. 114–127.
- Gkoumas, A. (2019): Evaluating a standard for sustainable tourism through the lenses of local industry, *Heliyon*, 5 (2019) e02707.
- GSTC (2013): Global Sustainable Tourism Council Criteria and Suggested Performance Indicators for Destinations, Version 1. Available at https://www.gstccouncil.org/wp-content/uploads/2013/11/Dest-CRITERIA_and_INDICATORS_6-9-14.pdf, last accessed 20.06.2020.
- GSTC (2020): What is the GSTC? Global Sustainable Tourism Council. Available at <https://www.gstccouncil.org/about/about-us/>, last accessed 20.02.2020.
- Hartmann, R., Stecker, B. (2020): Development of core indicators for the assessment and analysis of sustainable city tourism. In: Pechlaner, H.; Innerhofer, E., Erschbamer, G. (Ed.): *Overtourism: Tourism Management and Solutions*. Abingdon Oxford: Routledge, p. 81–92.
- Kristjánsdóttir, K.R., Ólafsdóttir, R., Ragnarsdóttir, K.V. (2018): Reviewing integrated sustainability indicators for tourism, *Journal of Sustainable Tourism*, 26(4), p. 583–599.
- Laimer, P. (2017): Tourism Indicators for Monitoring the SGDs. Presentation at 6th International UNWTO Conference on Tourism Statistics “Measuring Sustainable Tourism” Session 6. Manila, Philippines (23 June 2017). Available at https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjP0paZjN_qAhUjtnEKHYsEAQoQFjAAegQIBRAB&url=http%3A%2F%2Fwebunwto.s3.amazonaws.com%2Fimported_images%2F48592%2Flaimer_presentation.pdf&usg=AOvVaw2P2TZX_Ey9FtxCeWShYFK7, last accessed 20.06.2020.
- Lammerts van Bueren, E., Blom, E. (1996): *Hierarchical Framework for the Formulation of Sustainable Forest Management Standards*. The Tropenbos Foundation.
- Laws, E., Faulkner, B., Moscardo, G. (2003): *Embracing and Managing Change in Tourism: International Case Studies*, Routledge, London.
- Marzo-Navarro, M., Pedraja-Iglesias, M., Vinzón, L. (2015): Sustainability indicators of rural tourism from the perspective of the residents, *Tourism Geographies*, Vol. 17, No. 4, p. 586–602.
- Mikulić, J., Kožic, I., Krešić, D. (2014): Weighting indicators of tourism sustainability: A critical note, *Ecological Indicators*, 48 (2015) p. 312–314.
- Miller, G. (2001): The development of indicators for sustainable tourism: Results of a Delphi survey of tourism researchers, *Tourism Management*, 22 (4), p. 351–362.

- Miller, G., Twining-Ward, L. (2005): *Monitoring for a Sustainable Tourism Transition: The Challenge of Developing and Using Indicators*. Wallingford, UK: CABI Publishing.
- Ministry of Environment and Tourism (2013): *Report on the Namibia Tourist Exit Survey 2012–2013*. Ministry of Environment and Tourism. Available at http://www.namibia-tourism.com.na/uploads/file_uploads/Report_Namibia_Tourist_Exit_---survey_2012_2013.pdf, last accessed 08.03.2020.
- Niavis, S., Papatheochari, T., Psycharis, Y., Rodriguez, J., Font, X. and Martinez Codina, A. (2019): Conceptualising Tourism Sustainability and Operationalising Its Assessment: Evidence from a Mediterranean Community of Projects, *Sustainability*, Vol. 11 No. 15, p. 4042.
- OECD (2018): *DAC List of ODA Recipients Effective for reporting on 2018, 2019 and 2020 flows*. Available at http://www.oecd.org/dac/financing-sustainable-development-/development-finance-standards/DAC_List_ODA_Recipients2018to2020_flows_En.pdf, last accessed 10.03.2020.
- O'Mahony, C., Ferreira, M., Fernández-Palacios, Y., Cummins, V. and Haroun, R. (2009): Data availability and accessibility for sustainable tourism: An assessment involving different European coastal tourism destinations, *Journal of Coastal Research*, p. 1135–1139.
- Önder, I., Wöber, K. and Zekan, B. (2017): Towards a sustainable urban tourism development in Europe, *Tourism Economics*, Vol. 23 No. 2, p. 243–259.
- Pérez, V., Guerrero, F., González, M., Pérez, F. and Caballero, R. (2013): Composite indicator for the assessment of sustainability: The case of Cuban nature-based tourism destinations, *Ecological Indicators*, Vol. 29, p. 316–324.
- Pulido-Fernández, J.I., Sánchez Rivero, M. (2009): Measuring tourism sustainability: proposal for a composite index, *Tourism Economics*, 15 (2), p. 277–296.
- Rasoolimanesh, S.M., Ramakrishna, S., Hall, C.M., Esfandiari, K. and Seyfi, S. (2020): A systematic scoping review of sustainable tourism indicators in relation to the sustainable development goals, *Journal of Sustainable Tourism*, p. 1–21.
- Reed, M., Fraser, E. D. G., Morse, S., Dougill A.G. (2005): Integrating methods for developing sustainability indicators to facilitate learning and action, *Ecology and Society*, 10(1): r3.
- Rein, H., Strasdas, W. (2017): *Nachhaltiger Tourismus. Einführung*. Konstanz, München: UVK Verlagsgesellschaft.
- Rodrian, R. (2009): *Das Erbe der deutschen Kolonialzeit in Namibia im Fokus des „Tourist Gaze“ deutscher Touristen*. Würzburger Geografische Arbeiten. Heft 102. Würzburg.
- Roberts, S. and Tribe, J. (2008): Sustainability Indicators for Small Tourism Enterprises – An Exploratory Perspective, *Journal of Sustainable Tourism*, Vol. 16 No. 5, p. 575.
- Schianetz, K., Kavanagh, L., Lockington, D. (2007): Concepts and Tools for Comprehensive Sustainability Assessments for Tourism Destinations: A Comparative Review, *Journal of Sustainable Tourism*, 15 (4), p. 369–389.
- Schianetz, K., Kavanagh, L. (2008): Sustainability Indicators for Tourism Destinations: A Complex adaptive Systems Approach Using Systemic Indicator Systems, *Journal of Sustainable Tourism*, Vol. 16 (6), p. 601–628.
- Sirakaya, E., Jamal, T.B., Choi, H.-S. (2001): Developing indicators for destination sustainability. In: Weaver, D.B. (Ed.): *The Encyclopedia of Ecotourism*. Wallingford, UK: CABI International, p 411–432.
- Stecker, B. (2010): *Ökologie und Nachhaltigkeit in der Freizeit*. In: Freericks, R., Hartmann, R., Stecker, B. (Ed.): *Freizeitwissenschaft. Handbuch für Pädagogik, Management und nachhaltige Entwicklung*. München: Oldenbourg, p. 240–352.

- Stecker, B., Hartmann, R. (2019): Balancing the Sustainability of Tourism in City Destinations – The Case of Dubrovnik, In: Lund-Durlacher, D., Dinica, V., Reiser, D., Fifka, M.S. (Ed.): Corporate Sustainability and Responsibility in Tourism – A Transformative Concept. Berlin: Springer, p. 373–382.
- Tanguay, G. A., Rajaonson, J., Therrien, M. (2013): Sustainable tourism indicators: selection criteria for policy implementation and scientific recognition, *Journal of Sustainable Tourism*, 21(6), p. 862–879.
- The World Bank (2020): GINI index (World Bank estimate) – Namibia. Available at <https://data.world-bank.org/indicator/SI.POV.GINI?locations=NA>, last accessed 10.03.2020.
- Torres-Delgado, A., Saarinen, J. (2014): Using indicators to assess sustainable tourism development: a review, *Tourism Geographies*, 16(1), p. 31–47.
- Tudorache, D., Simon, T., Freñ, C. and Musteață-Pavel, M. (2017): Difficulties and Challenges in Applying the European Tourism Indicators System (ETIS) for Sustainable Tourist Destinations: The Case of Brașov County in the Romanian Carpathians, *Sustainability*, Vol. 9 No. 10, p. 1879.
- Twining-Ward, L., Butler, R. (2002): Implementing STD on a small island: Development and use of sustainable tourism development indicators in Samoa, *Journal of Sustainable Tourism*, 10(5), p. 363–387.
- UN Development Programme (2019): Human Development Reports – Human Development Index and its components. United Nations. Available at <http://hdr.undp.org/en/com-posite/HDI>, last accessed 10.03.2020.
- United Nations (2018): Sustainable Development Goals. Available at <https://sustainable-development.un.org/?-menu=1300> last accessed 12.05.2020
- UNWTO (2013): Sustainable Tourism for Development Guidebook. Enhancing capacities for Sustainable Tourism for development in developing countries. World Tourism Organization (UNWTO) with support of the European Commission (EC). Available at <http://whc.unesco.org/sustainabletourismtoolkit/sites/default/files/13.%20UNWTO%20%282013-%29%20Sustainable%20Tourism%20for%20Development%20Guidebook.pdf> last accessed 11.03.2020.
- Valentin, A., Spangenberg, J.H. (2000): A guide to community sustainability indicators, *Environmental Impact Assessment Review*, Vol. 20 No. 3, p. 381–392.
- White V., McCrum G., Blackstock K.L., Scott A. (2006): Indicators and sustainable tourism: A literature review. Aberdeen, UK: The Macaulay Institute.
- WTTC (2019): Namibia 2019 Annual Research: Key Highlights, World Travel & Tourism Council. Available at <https://www.wttc.org/economic-impact/country-analysis/country-data/>, last accessed 20.03.2020.

Reconciling Scientific, Political and Participatory Perspectives on Sustainable Tourism Indicator Development for Destination Sustainability Assessment

Elena Eckert

School of Management and Technology, Leuphana University Lüneburg, Lüneburg, Germany

ABSTRACT

Sustainable tourism indicators (STI) are widely recognized as a useful tool for assessing the sustainability level of a tourism destination. Methods for STI development, however, are still inconsistent and often characterized by a debate between approaches proposed by three parties: scientists, policy-makers and supporters of participatory decision-making. Despite the development of approaches that address this debate, there has been little agreement on the broader methodological and conceptual foundations of STI development. In the pursuit of finding consensus, a Delphi survey is conducted in which an expert panel assesses and discusses the potential of innovative hybrid methodologies. Findings emphasise a shift towards more participatory formats and show that the requirements of all three parties can be met. This study advances future STI development processes by structuring the debate, evaluating existing and new approaches and exemplifying how to conceptualize formats to facilitate local involvement, thereby mapping out future pathways for STI development.

KEYWORDS

Sustainable tourism;
indicators; assessment;
community participation;
Delphi survey

1. Introduction

As one of the world's biggest industries, tourism has the responsibility and assumed capacity to contribute to sustainable development in a wide range of contexts at local and global scale (Saarinen, 2020; Scheyvens, 2018). Sustainable tourism has the potential to increase residents' quality of life, secure local livelihoods and protect the environment it depends on while providing a high-quality product to visitors (Choi & Sirakaya, 2006). In the face of increasing complexity of the pressing global challenges such as climate change, pandemics, ecosystem degradation and loss of biodiversity, only tourism that is managed based on the principles of sustainability can ensure pleasant environments to live in and visit for future generations. Tourism destinations play a vital role in this development as they are the focal point of the tourism product where suppliers, visitors and residents come together. From a managerial perspective, operationalizing sustainable development for a destination system is a key requirement as it gives meaning to the abstract concept, informs decision-making, facilitates learning among stakeholders

and supports strategy development (Waas et al., 2014). Therefore, sustainability assessment (SA) for tourism destinations using sustainable tourism indicators (STIs) has become a widely recognized tool in tourism planning and development to measure a destination's progress towards or regress away from sustainable tourism development (Castellani & Sala, 2010; Ko, 2005). While it comes as no surprise that the selection and design of STIs has considerable influence on the outcome of the SA, surprisingly little attention has been paid to STI development. Although research on STI application has been extensive (Blancas et al., 2011; Torres-Delgado & Saarinen, 2014) and myriad sets of contextual STIs have been developed (cf. Diéguez-Castrillón et al., 2021), the lack of methodological and conceptual consensus regarding STI development is repeatedly emphasized (2022 Asmelash & Kumar, 2019; Diéguez-Castrillón et al., 2021; Lupoli et al., 2014; Ramos, 2019).

The debate on STI development is traditionally led by three stakeholder groups: Firstly, scientists who are considered experts on the topic of sustainable tourism in an academic sense and whose approaches seek to obtain scientific comprehensiveness and accuracy; secondly, policy-makers specified as individuals responsible for making policy decisions whose approaches are driven by practical feasibility and policy significance and lastly, local communities referring to residents and the local private sector businesses whose approaches are based on community involvement and local relevance (Fraser et al., 2006; Reed et al., 2006).

One stream of research on indicator development focuses on the trade-offs between scientists' and policy-makers' approaches to STI development, introducing procedures that ensure scientific legitimacy and policy-relevance (Rametsteiner et al., 2011; Tanguay et al., 2013). However, these considerations often leave out community perspective beyond resident representation through policy makers. Although widely acknowledged as a relevant stakeholder group in tourism and key players for successful indicator implementation, residents still remain underrepresented in indicator development processes (Thees et al., 2020 2022).

A second stream of research (Fraser et al., 2006; Reed et al., 2006) focuses on the *top-down vs. bottom-up paradigm* but is often unable to provide a differentiated picture of the "top" perspective, merely describing it as expert-led. This can however mean that indicator development is either political-administrative or science-driven.

The present study, therefore, aims to contribute to the STI literature by thoroughly reviewing and structuring the current multi-disciplinary debate through a literature review and exploring future pathways that can bridge the divide between the standpoints. This is achieved by bringing academics, policy makers and supporters of community involvement to one table, encouraging consensus between them.

The Delphi method is used as a communication tool for a panel of experts to facilitate an exchange of views and encourage consensus on inventive *hybrid methodologies*. This term is used to describe the involvement of researchers, policy-makers and non-expert groups in indicator development likewise and attach value to diverse knowledge repertoires to facilitate a more meaningful assessment (Reed et al., 2006; Schianetz & Kavanagh, 2008; Thomas & Twyman, 2004).

Although approaches that certainly have the ability to bridge the gap between developing STIs in an objective manner, while basing their contents on local destination conditions have been developed, there is still a divide between the positions and each approach is criticized by the same parties for the same deficits (cf. Table 1). Traditional

approaches by scientists are characterized by their methodological accuracy and strong academic rigor (Holman, 2009; Niemeijer & Groot, 2008; Torres-Delgado & Saarinen, 2014). Their use is justified by the idea that sustainability is a complex matter, requiring equally complex technical and scientific methods of measurement (Tanguay et al., 2013). Despite these merits, scientific approaches are criticized for being too theoretical and characterized by their technicality which impedes operational use (Ramos, 2019; Torres-Delgado & Palomeque, 2014). Adding to this criticism, the complex scientific terminology is unpopular with policy-makers and is assumed to create communication barriers with destination stakeholders, lowering the societal impact of the assessment (Laimer, 2017; Marques et al., 2013; Mascarenhas et al., 2014; Ramos, 2019; Tanguay et al., 2013). Addressing this shortcoming, other researchers advocate for taking the sustainability discussion “out of the closed rooms of experts, scientists and politicians into an open debate” (Garnåsjordet et al., 2012, p. 333). The purpose of these calls is to facilitate a better community understanding about tourism impacts and its perceived benefits and to increase legitimacy and ownership of proposed solutions (Byrd, 2007; Garnåsjordet et al., 2012; Holman, 2009; Sinclair et al., 2015). However, Fraser et al. (2006) note that such processes might not only be time and resource intensive but can also carry the risk of producing unstandardized data, invalid for regional comparison. Lastly, policy-makers find themselves in between scientific and community perspectives: STI development by policy-makers can attract public interest and support and can be more easily understood and used by non-specialists and a public audience (Janoušková et al., 2018; Miller, 2001; Rasoolimanesh et al., 2020). By contrast, indicators developed by policy-makers are prone to conflict as they might be selected in order to align with the interests of political actors (Rametsteiner et al., 2011; Rasoolimanesh et al., 2020).

This overview shows that the development of STIs is subject to different underlying rationales, heterogeneous knowledge repertoires and conflicting interests. As there have been several calls to reevaluate STI priorities and develop approaches that integrate all streams of thought (Diéguez-Castrillón et al., 2021; Fraser et al., 2006; Ivars-Baidal et al., 2021; Waas et al., 2014), thus far, a small but growing number of studies has begun to explore STI development methods (Asmelash & Kumar, 2019; Choi & Sirakaya, 2006; Cloquell-Ballester et al., 2006; Parkins et al., 2001; Reed et al., 2006; Reihanian et al., 2015; Torres-Delgado & Palomeque, 2014). Nevertheless, current practices often seem arbitrary in their indicator choice and have clearly not agreed on an established methodology as they often remain uncoordinated, not in themselves but across a broader methodological scale, thus not providing a roadmap for future applications.

2. Indicator development

Before we can discuss and evaluate potential compatibilities between approaches proposed by academics, policy makers and supporters of community involvement, we must again become aware of the arguments from the three parties. Only then is it possible to evaluate hybrid approaches and structure the debate by exploring appropriate tools and strategies for future planning. Since a multitude of STIs for branches of the tourism industry (e.g. accommodation, tour operators, destinations) have been developed in the past 30 years, most SA initiatives rely on existing indicator sets. In a destination context, initiatives traditionally draw on STIs relevant to their destination from open

catalogs such as the SDGs, UNWTO indicators, GSTC, ETIS or destination certification businesses. This selection process can be either political-administrative or science-driven. As described above, the two do differ in their characteristics; however, both are executed in a top-down manner (Rametsteiner et al., 2011). While bottom-up approaches are gaining momentum (Kristjánsdóttir et al., 2017), the central questions distinguishing both approaches remain (1) *Who participates?* and (2) *Who decides?* (Rametsteiner et al., 2011, p. 62). The following Table 1 illustrates the advantages, disadvantages and commonly criticized aspects of both paradigms.

Another very specific form of the expert-led top-down approach in destination SA is the employment of external agents. This practice can often be witnessed in tourism destinations in the Global South where international consultancies, NGOs, development cooperation agencies or foreign tour operators enter the destination with the intention to promote sustainable tourism development. These external agents are often chosen due to their global expertise and reputation or in the pursuit of strengthening existing relationships. This practice can however be regarded as paternalistic giving the impression that local communities are dependent on outside help. External agents often justify their presence by the purported lack of knowledge and expertise from the community (Lupoli et al., 2015; Moscardo, 2011) which reinforces power imbalances suggesting that external agents are superior over local communities (Moscardo, 2011).

2.1. Stakeholder participation in tourism planning

Tourism is a people's business dependent on the collaboration between multiple stakeholders such as institutional actors, DMOs, tourism businesses, local communities and visitors. Therefore public participation is even more important in tourism than it is in other sectors. While the purpose of stakeholder participation is well understood, the process, involving a number of different types and gradations of participation, is all the more complex and should not be underestimated (Thees et al., 2020; WTO, 2004). The World Tourism Organization states that participatory processes depend on good communication, transparency and patience and further describes the processes as "complex, time-consuming and inherently unpredictable" (WTO, 2004, p. 29). Since destination SA is an inherent part of tourism planning, the challenges associated with participatory processes also apply to collaborative STIs development. Valentin and Spangenberg (2000) pose two important questions regarding this process: "(1) Which interests have to be involved into developing indicators? (2) How broad a participation can be managed?" (p. 382). Regarding question one, STI processes should ensure the representation of people of different groups, including gender, age, social and scientific background and political orientation (Domingues et al., 2018; Torres-Delgado & Saarinen, 2014). Failure to address the multi-faceted spectrum of interests or only superficial consideration can lead to *pseudo-participation* which, in line with the ladder of community participation by Arnstein (1969), is a term used when there is a certain number of stakeholders involved in the process, which indicates that participation took place, although certain views were deliberately neglected (Bell & Morse, 2018; Torres-Delgado & Saarinen, 2014). Bell and Morse (2018) warn that participation can be 'twisted' in this way to create an output (e.g. a list of STIs) desired only by some (p. 192). While that answers the first question on a broad basis, it is more difficult to assess *how* to manage the participation of these

Table 1. Advantages, disadvantages and criticism of top-down and bottom-up approaches.

	Advantages	Disadvantages	Criticism
Top-down approaches (Expert-led approaches by scientists or policy-makers)	<ul style="list-style-type: none"> – Elevated level of objectivity^{1,2} – Scientific soundness and accuracy of methods^{3,4} – High degree of indicator acceptance in the scientific world and (mostly) extensive testing⁵ – Possibility to observe trends between regions and over time⁵ – Extensive case-experience and training of experts^{1,6} 	<ul style="list-style-type: none"> – Failure to reflect locally important issues and to engage local communities^{5,7,8} – Lack of community support^{8,9} – High cost for experts⁶ – Limited availability of experts⁶ 	<ul style="list-style-type: none"> – Rigid, technical framework^{1,10} – Communication barriers caused by technical language^{11,12} – Risk of paternalistic, pseudo-participatory approaches¹³ – Pre-determined outcome¹³ – Low degree of citizen participation as per Arnstein (1969)¹³ – Western-centric frameworks and models unsuitable for some destinations^{14,21} – Political bias from experts^{15,16,17} – Primary profit-orientation by experts (private companies, consultancies)^{9,15}
Bottom-up approaches (Community-led approaches)	<ul style="list-style-type: none"> – Insights into local perspectives and perception of the destination^{5,18} – Insights into local opinions and needs¹⁸ – Contextualization and holistic view of local situation/issues^{5,20} – Consideration of relevant local knowledge^{13,19,21,22} – Community empowerment^{13,14,23,24} – Integration of those ultimately affected by tourism development²⁸ – Awareness-creation of potential tourism benefits^{13,25} – Capacity building^{3,5,9,13,23} – Facilitation of better community understanding and learning of environmental and social sustainability^{1,5,23} 	<ul style="list-style-type: none"> – Time-consuming, resource-intensive, expensive and complicated process^{5,19,25} – Number of indicators beyond practical applicability^{4,5} 	<ul style="list-style-type: none"> – Community's lack of relevant skills, expertise and resources for the evaluation^{20,27} – Unreliable and inaccurate indicator monitoring⁵ – Elevated level of subjectivity^{2,5,27} – Unstandardized data, invalid for regional comparison^{2,5,9,25}

(Continued)

Table 1. Continued.

	Advantages	Disadvantages	Criticism
	<ul style="list-style-type: none"> – Local ownership and pride concerning tourism development^{2,4,26,28} – Elevated tendency for acceptance, appreciation and use of results by community due to involvement, information and co-creation^{14,16,21,25} – Potential settlement of differences within stakeholder group^{5,22} 		

¹Schianetz & Kavanagh (2008).

²Tanguay et al. (2013).

³Holman (2009).

⁴Torres-Delgado & Saarinen (2014).

⁵Reed et al. (2006).

⁶Farrell & Marion (2002).

⁷Byrd (2007).

⁸Marques et al. (2013).

⁹Fraser et al. (2006).

¹⁰Ramos (2019).

¹¹Laimer (2017).

¹²Mascarenhas et al. (2014).

¹³White et al. (2006).

¹⁴Bello et al. (2016).

¹⁵Erdmenger and Kagermeier (2020).

¹⁶Rametsteiner et al. (2011).

¹⁷Rasoolimanesh et al. (2020).

¹⁸Castellani & Sala (2010).

¹⁹WTO (2004).

²⁰Gkoumas (2019).

²¹Impink and Gaynor (2010).

²²Domingues et al. (2018).

²³Miller (2005).

²⁴Agrusa & Albieri (2011).

²⁵Lupoli et al. (2015).

²⁶Bramwell & Lane (2011).

²⁷Miller (2001).

²⁸Wondirad et al. (2020).

interest groups. The most appropriate method of participation is dependent “upon context and the expertise and experience of those attempting to facilitate the participation” (Bell & Morse, 2018, p. 192). Various forms of multi-stakeholder meetings such as stakeholder workshops, citizen portals, seminars, round tables, surveys and focus groups are particularly popular (Bell & Morse, 2018; Miller & Twining-Ward, 2005; Reed et al., 2006; Sinclair et al., 2015; Thees et al., 2020). Recently, so-called *e-participation* centering around destination websites, social media and apps is also considered to be a method with potential (Moscardo, 2019; Waligo et al., 2013). Research suggests that these new forms of “gamification of governance” can positively influence the communities’ willingness to partake in tourism planning (Erdmenger & Kagermeier, 2020, p. 5).

2.2. Basic requirements for community participation

The level of effective community participation is said to change depending on the intensity of participants’ motivation, opportunity and ability to participate (Hung et al., 2011) (Figure 1).

Participants’ motivation refers to their needs, wants and desires regarding the participatory process. Contrary to the common believe that stakeholders are eager to participate in tourism management, motivating participants to partake in participatory formats can be challenging (Bell & Morse, 2018; Erdmenger, 2022; WTO, 2004).

Participants’ opportunity to engage in public participation in the context of tourism planning refers to the availability of participation formats. This availability is dependent on the openness and decentralization of local governmental policy and the governments’ willingness to relinquish control to the public (Hung et al., 2011). If governments are willing to facilitate community participation, the practical implementation is then largely characterized by organizational factors such as time and money resources both on the end of organizers as well as participants. The associated high resource intensity is often stated as a downside to community participation, however, some researchers argue that these inefficiencies are most likely an indication of “poorly designed” public



Figure 1. MOA model for community participation. Source: Own figure; design based on Benedjma and Mahimoud (2020), contents based on Bell and Morse (2018), Bello et al. (2016); Byrd (2007), Cloquell-Ballester et al. (2006), Erdmenger (2022), Hung et al. (2011), Lupoli et al. (2015), Marques et al. (2013), Saufi et al. (2014), Sinclair et al. (2015), Waligo et al. (2013), WTO (2004).

participation frameworks rather than of shortcomings of meaningful involvement itself (Diduck, 2010, p. 509; Sinclair et al., 2015). As the dominance, power and knowledge level of the participants can vary, a good facilitator is needed to give participants a chance to be heard and prevent the predominance of individual “leaders”. After all, the aim of the format is to give the local population the opportunity to provide input (Bell & Morse, 2018; Lupoli et al., 2015). This point directly ties into the participants’ ability to express their opinions which is characterized by their cognitive and social resources to contribute to the issue in a meaningful manner. Previous studies reveal that participants often lack the adequate skills, awareness and knowledge of tourism planning and sustainability sciences for the technical development of STIs (Bello et al., 2016; Diduck, 2010; Marques et al., 2013; Saufi et al., 2014). Likewise, experts may have insufficient communication skills to engage in discussions about local issues (Diduck, 2010). Hung et al. (2011) found that the level of sustainable tourism awareness and knowledge positively correlates with the community’s willingness to participate.

Participants’ motivation, opportunity and ability to participate act as a moderator for the realization of a sound SA based on a collaborative STI development process. Formats and methods for said processes are now further explored based on the results of the Delphi survey conducted as part of this research.

3. Method

3.1. Delphi survey method

The Delphi method is one of the most highly valued methods for the collection of expert opinion, decision-making and consensus reaching in a context of imperfect knowledge (Green et al., 1990; Murry & Hammons, 1995). A key advantage of the method is that consensus can be reached anonymously and in written form without meeting face to face (Gracht, 2012; Green et al., 1990). Miller (2001) describes achieving group consensus without groupthink as an “almost paradoxical” aim of the Delphi survey (p. 335).

In this study, the employment of an iterative Delphi survey was envisaged to act as a communication tool for a panel of experts and allow for an exchange of views and perspectives on STI development. This exchange can be facilitated through open-ended questions that capture input and opinions from experts, allowing them to share their own ideas and test their hypotheses (Miller, 2001; Novakowski & Wellar, 2008).

3.2. Selection of expert panel

The survey was directed at informed professionals in the field of tourism and sustainability science, tourism practitioners and experts on tourism governance and community participation. A sample of 96 individuals was systematically selected based on the expert identification methods *personal involvement* and *external cues* by Mauksch et al. (2020) who reviewed and evaluated approaches for identifying experts in foresight research. Individuals were found via internet research and suggestions from participants and then evaluated for suitability based on the criteria above. The participants’ qualification to partake in the survey was attributed to their expertise or practice in one of the following categories:

- Individuals having published on destination SA, STI development or community participation in established academic (tourism) journals (e.g. Annals of Tourism Research, Ecological Indicators, Journal of Sustainable Tourism, Tourism Geographies)
- Policy-advisors/ members of technical advisory boards for (destination) sustainability (e.g. UNWTO Statistics, UNWTO MST Initiative, GDS-Movement Technical Advisory Committee, UN SEEA)
- Individuals from local authorities/public administration in sustainability-awarded destinations
- Members of non-profit/non-governmental organizations on human rights in tourism and sustainable tourism (e.g. Tourism Watch, BEST-Education Network, Ecological Tourism in Europe)
- Sustainable tourism destination certification experts/consultants (e.g. GSTC board members and certification organizations)

While it might seem like the sample is heavy on representatives of academia and policy, it must be noted that many scientists, consultants and tourism officials have recognized the need to consider local values and needs in sustainable tourism development and advocate this accordingly. Therefore, a classification of participants into the above-mentioned groups does not necessarily reflect their stance on the subject. A great effort was made to ensure a balanced degree of input from all relevant perspectives. Given the very specific nature of the topic, it was decided against opening the sample further as this could have led to a decrease in overall expert knowledge.

3.3. Questionnaire design

Questions for the first survey round were based on a literature review conducted on STI development and STI selection criteria. The first question asked participants to rate the relevance of each interest group for STI development in destination SA on a 5-point Likert scale with 1 (very irrelevant) and 5 (very relevant). The second question had participants rate selection criteria for STI development on a 10-point scale according to their importance. Each criterion was provided with an explanation to facilitate a common understanding, as some terms are used interchangeably in the literature. The list of criteria was compiled based on the evaluation of 25 previously conducted studies and publications by academics and international tourism organizations. Participants could add missing criteria or notes on mentioned criteria and their corresponding priority in an open-ended question. Lastly, participants were asked to rate six examples of hybrid methodologies according to their potential for future conciliatory indicator development. After rating each methodology on a 5-point Likert scale with 1 (very low potential) and 5 (very high potential), respondents had the opportunity to pose comments or questions regarding the hybrid-methodologies mentioned or suggest new ones.

3.4. Survey process and evaluation

The survey was conducted between November 2020 and January 2021. After a pre-test, all 96 experts were contacted via email or LinkedIn. 20 days after the first round, 38 valid responses had been returned by experts from 19 countries. Since the intended structure of the expert group had not been impaired in a significant way by the reduction of participants, this number was considered sufficient to prepare the questionnaire for the

second round and distribute it to respondents (Green et al., 1990). Frequency counts, measures of central tendency (mean, median) and measures of dispersion (standard deviation, interquartile range) were calculated using SPSS® Statistics. Answers to open-ended questions were structurally elaborated and grouped into thematic clusters using MAXQDA qualitative data analysis software.

The questionnaire design was then altered for the second round in four primary ways:

1. Response options were partially modified based on the feedback concerning language and wording without impairing data comparability (Asmelash & Kumar, 2019; Novakowski & Wellar, 2008)
2. Addition of a feedback element along the response scale showing the distribution of the panel's responses (in percentage of total) or overall mean of responses from round 1 (Green et al., 1990; Miller, 2001; Novakowski & Wellar, 2008)
3. Additional criteria and hybrid-methodologies suggested by the participants from round 1 were added (Novakowski & Wellar, 2008)
4. Feedback obtained from round 1 and corresponding text fields were added, allowing participants to comment on the positions of other experts (Häder, 2014)

The second-round questionnaire was then sent to the 38 experts who had validly completed the first round. Experts were asked to revise their initial tendency in the light of the new information in an attempt to move the respondents closer to consensus (Green et al., 1990; Novakowski & Wellar, 2008). After 5 weeks, 30 valid responses had been returned.

Although extensively discussed (Dajani et al., 1979), the concepts of stability and consensus for determining a stopping criterion in Delphi surveys are not explicitly defined and vary from study to study (Giannarou & Zervas, 2014; Gracht, 2012; Landeta, 2006; Mitchell, 1991). In this study, the first and last question sets use a 5-point Likert-type rating scale, which provides written statements for each option. Research suggests that respondents do not perceive Likert-type scales as equidistant (Lantz, 2013; Sullivan & Artino, 2013), which must also be assumed for this case, which is why median and interquartile range are used as statistical measures herein. Based on an in-depth literature review, an $IQR \leq 1$ on a 5-Likert scale and $IQR \leq 2$ on a 10-Likert scale were chosen as consensus criteria (Hackett et al., 2006; Häder, 2014; Scheibe et al., 1975). Besides median and IQR as primary criteria, a secondary determinant of consensus, measuring the percentage of votes that fall within a prescribed range on the Likert scale, will be evaluated as proposed by Doke and Swanson (1995), Hackett et al. (2006) and Lee and King (2009). However, Gracht (2012) warns against the arbitrary choice of cut-off points and recommends to follow established standards such as political voting systems. This study, therefore, employs a two-thirds majority. Despite the fact that calculating the mean is a limited value in terms of scale appropriateness (Sullivan & Artino, 2013), it is calculated for all selection criteria as they were posed using a numbered 10-point scale with only two verbal anchors at the end. It can thus be concluded that by providing consecutive integers, respondents perceived the distance between single scores as equal (Lantz, 2013). This combinatory use of measures allows for better differentiation of results on both scales.

As the results indicated a sufficient level of consensus (see section 4), more than two survey rounds were not judged expedient by the researcher. Considering that response

rates decrease with every subsequent round of surveying, it can be assumed that a third round would have led to a minimal convergence of opinion at the expense of high panel fatigue and attrition (Green et al., 1990; Miller, 2001; Mitchell, 1991). Moreover, some researchers argue that Delphi is an analysis instrument more than a consensus tool and that it should be applied to support problem solving rather than to achieve final consensus (Kaynak & Macaulay, 1984; Miller, 2001).

4. Results

The main purpose of the analysis was to gain insights about priorities for stakeholder participation and selection criteria and to identify promising hybrid solutions to aid future STI development. The evaluation of the measure of dispersion revealed that consensus had been attained in 21 out of 25 items after the second round. Concerning the relevance of each interest group and the hybrid methodologies, the IQR was ≤ 1 in every case. In total, 24 out of 25 items recorded consistency or an increase in convergence between rounds 1 and 2 (Tables 2, 3 and 4).

There was general agreement on the need for all three interest groups to be represented in the STI development process. Interestingly, 100% of votes for community relevance fell into categories 4 and 5 in the second round, while the dispersion for scientist's relevance was highest. Generally, there was a common understanding among respondents that no group is more important than the other, it is just that their roles are different. As one participant stated:

They each bring distinctive contributions to the process, without which the indicator development will leave gaps and hence be less efficacious when applied in SA context which binds all parties. (Survey participant n-4)

Concerning the selection criteria, whether ranked by mean, median or percentage of votes falling within option 9/10, the criteria *relevance*, *comprehensibility* and *local context* always ranked highest. There was strong agreement that indicators applying to the destination and responding to concerns expressed by locals should be prioritized. Moreover, clear and unambiguous indicator meaning, which is easily understood and interpreted by stakeholders and the public, was considered of prime importance. The *participation* criterion was subject to considerable disparity in opinions. While it was ranked highly, some respondents argued that it was a property of the communication and not the indicator itself and therefore redundant as a criterion. This disharmony is reflected in the highest standard deviation value of all criteria. Interestingly, it is only in the mid-range of the ranking that criteria appear which are specifically

Table 2. Ratings on relevance of interest groups in STI development.

	Round 1			Round 2		
	Median	IQR	% 4–5	Median	IQR	% 4–5
Relevance of interest groups in STI development						
Equal representation of scientists, policy-makers and local communities in the development of STIs for SA	4	0	79	4	0	87
Relevance of scientists for the development of STIs in SA	4	1	95	4	1	89
Relevance of policy-makers for the development of STIs in SA	4	1	84	4	1	90
Relevance of local communities for the development of STIs in SA	4	1	89	4	1	100

Table 3. Ratings on STI selection criteria.

	STI selection criteria	Round 1			Round 2		
		Median	μ	IQR	Median	μ	IQR
1	Relevance ^{1,2,3,4,5} <i>(The indicator applies to issues which are relevant for the destination under study and provides useful information for local sustainable tourism development)</i>	10	8,5	2	9	9,0	1
2	Data availability ^{3,4,6,7} <i>(Data for the indicator is readily available or easily retrievable)</i>	6	6,6	3	7	6,8	2
3	Scientific rigor ^{1,2,5} <i>(The indicator is firmly based on scientific principles (objectivity, reliability, validity))</i>	7	6,9	2	8	7,3	2
4	Ease of treatment ^{1,3,4,6,8,9} <i>(The indicator is easy to use and easy to calculate/evaluate for local users)</i>	7	6,7	4	7	6,9	4
5	Comprehensibility ^{1,2,4,5,9} <i>(The indicator is clear, unambiguous and easily understood and interpreted by stakeholders and the public)</i>	8	8,1	3	9	8,7	2
6	Comparability ^{1,2,3,4,5,6} <i>(The indicator allows for comparison over time and across other destinations)</i>	6,5	6,6	4	7,5	7,2	2
7	Complexity ^{6,8,10} <i>(The indicator (system) assesses one or more variables, reflecting the interconnectivity and interdependencies of tourism development)</i>	5,5	5,6	3	5	5,6	3
8	Cost- and time-effectiveness ^{2,4,5,6} <i>(The resources used for data-collection on the indicator are reasonable in relation to the information generated)</i>	6	6,2	3	7	7,0	2
9	Policy-relevance ⁷ <i>(The indicator is related to the local tourism policy)</i>	7	6,7	2	8	7,6	3
10	Local context ^{2,11} <i>(The indicator measures issues that are important for destination stakeholders/responds to concerns specifically expressed by locals)</i>	8	8,0	1	9	8,6	1
11	Coherence <i>(The indicator set is based on coherent underlying data that allows for the identification of trends and states in the given location or context)</i>	–	–	–	8	7,4	3
12	Participation <i>(The indicator allows for equal stakeholder and community access and participation)</i>	–	–	–	8	7,8	2
13	Connectivity <i>(The indicator connects global or national tourism/sustainability trends to the local destination scale)</i>	–	–	–	7	6,9	2

¹Torres-Delgado & Palomeque (2014).

²Reed et al. (2006).

³Andes et al. (2019).

⁴Miller (2001).

⁵WTO (2004).

⁶Parkins et al. (2001).

⁷Reihanian et al. (2015).

⁸Fraser et al. (2006).

⁹Domingues et al. (2018).

¹⁰Sirakaya et al. (2001).

¹¹Janoušková et al. (2018).

related to the scientific requirements of STI development. Although, *coherence* and *scientific rigor* mean-wise only scored minimally lower than *participation* and *policy-relevance*, only a quarter of respondents award them a 9 or 10 on the scale. The criterion *coherence* was added for the second round, following the suggestion of a respondent who stated that:

The biggest problem for indicator sets is that the underlying data is not coherent [...] If indicators are developed without an underlying theory as to the relationships between them

Table 4. Ratings on hybrid methodologies for STI development.

Hybrid methodologies	Round 1			Round 2		
	Median	IQR	% 4–5	Median	IQR	% 4–5
H1 Addition of participation indicators to the indicator set	4	1	56	4	1	77
H2 Local-level indicator development based on Parkins et al. (2001) and Reed et al. (2006)	4	0	78	4	0	88
H3 Validation approach using a Delphi survey	3	1	39	3	1	46
H4 The <i>3S Methodology</i> for environmental and social impact assessment based on Cloquell-Ballester et al. (2006)	4	1	69	4	1	56
H5 Development and use of STIs based on Reihanian et al. (2015)	4	1	57	4	1	68
H6 Use of intermediary groups	4	2	51	4	1	64
H7 Repeated process of indicator validation among the three groups	–	–	–	4	1	56
H8 Policy design, implementation, and evaluation with various stakeholders for each step	–	–	–	4	1	64

then simply involving multiple stakeholders will not allow for translation of indicators into changed behaviours and actions. (Survey participant n-16)

The item *comparability*, which is often stressed by advocates of scientific methods, stands out because of a reduction in IQR by two points between rounds 1 and 2. The criterion *complexity* brings up the rear in the ranking with an average score of 5 points.

The last question had participants vote examples of hybrid methodologies according to their potential for future conciliatory indicator development. The first hybrid methodology suggests to ensure stakeholder involvement through indicators themselves by adding STIs such as: *Residents' satisfaction with their involvement and influence in tourism development* (European Commission, 2016), *Host community's access to decision-making and information* and *Host community's ability to influence tourism development through democratic participation* (Rasoolimanesh et al., 2020). Respondents attributed consistently high potential to this idea, leading to a placement in the top three answers in both survey rounds with low overall disparity. For the second suggestion, indicators relevant to host communities are identified in participative community workshops. Indicators are then validated using an expert-led sustainability evaluation based on pre-defined literature-based selection criteria (Lupoli & Morse, 2015; Lupoli et al., 2015; Parkins et al., 2001; Reed et al., 2006). This hybrid methodology scored the highest overall relevance in both rounds. 88% of participants considered this approach to have high or very high potential. This is also the only option to have an IQR of 0 in both rounds, emphasizing the high degree of consensus among participants. The third suggestion starts with a preliminary literature-based indicator set developed by scientists. Subsequently, indicators are filtered according to selection criteria and then validated using a Delphi-survey. Among others, the practical application of this method was tested by Ghoochani et al. (2020) and Torres-Delgado and Palomeque (2014). This suggestion was rather controversial with opinions spread across the range of possible answers as reflected in the median of 3 in both rounds. Suggestion four starts with the "working team" creating an indicator set by scanning existing indicators and by adding newly designed indicators. Firstly, the suitability of these STIs is verified by the "working team". Secondly, the STIs are verified by independent experts to guarantee scientific validity. Thirdly, a social validation takes place in

which residents or representatives of the civil society are consulted (Cloquell-Ballester et al., 2006). While there was a greater disparity in opinion, this method was ranked highly in both rounds. Option five starts with an expert committee that screens potential indicators, narrows them down based on pre-defined criteria and then fine-tunes them with indicator-specific key-informants (Reihanian et al., 2015). Respondents consistently attributed medium/high potential to this option. The last methodology proposed in both survey rounds refers to the use of intermediary groups. Indicators are developed in a joint workshop in which intermediaries are employed to strengthen the effectiveness of communication between experts and communities by facilitating knowledge-exchange between scientific and non-scientific knowledge thus enabling a mutually enriching knowledge production (Mascarenhas et al., 2014; Reed, 2008). The potential of this method was deemed as rather neutral with a high disparity of opinion in round 1. Despite a considerable decrease of IQR and SD, no considerable increase in potential could be attested in round 2. The following two approaches were added in the second-round resulting from the suggestions of participants. The iterative approach has scientists gather possible indicators from scientific literature, policy-makers and communities. Indicators are then assessed against pre-determined selection criteria. Lastly, results are discussed with policy-makers and residents and then returned to scientists. This process is repeated until a reliable set of indicators emerges. Respondents ranked this method in the lower end of the spectrum. The last methodology introduced in the survey is also three-folded. Firstly, local communities, policy-makers and scientist/experts in public engagement gather to define the sustainable tourism vision, policy, and objectives. Secondly, the implementation is carried out in public-private-community partnership. Lastly, policymakers and experts evaluate the implementation using a hybrid approach (internal evaluators and external experts/scientists). Respondents were unanimous in deeming this approach to be of medium-high potential. Concerning the open-ended questions, in which respondents had the chance to interact with each other, three broad themes emerged. A shared view amongst respondents was that there is no one-size fits all methodology but that every development approach needs to be tailored to the context of application, the goal of assessment and the geographical scale. Respondents also agreed that there should be low involvement barriers for the local community, partly referring to own experiences. The last theme is exemplified by this participants statement:

... Indicators can provide more than just data, they can encourage collective learning processes, by allowing stakeholders to discuss each other's point of view. Stakeholder engagement is likely to be time consuming, costly and challenging, but if change and participation is expected from certain stakeholder groups, it might pay in the end. (Survey participant n-9)

The acknowledgement of the fact that the benefits of collaborative STI development exceed the purpose of a conceptually sound SA by far, was repeatedly emphasized.

5. Discussion and conclusion

This study underlines that the divide between developing a set of indicators which is scientifically sound and in line with political policy while considering local context and

community perspectives can be bridged. The results indicate that all three interest groups need to be equally represented in the STI development process. These findings are in line with previous research which strongly suggests that a play of positions against each other is not effective, acknowledging community participation and stakeholder involvement as fundamental for SA (Sinclair et al., 2015). The results obtained from the analysis of the STI selection criteria show that many criteria score very similarly in the mid-range of the ranking. Participants clearly prioritized criteria related to destination perspective, community involvement and local needs. Additionally, the criterion *comprehensibility* was emphasized, indicating a trend away from complex scientific terminology.

Concerning the hybrid methodologies, the research has identified H1, H2 and H4 as approaches with the highest potential for future use. Ensuring stakeholder involvement through indicators themselves (H1) was felt to be very promising, which can be explained by the simplicity and ease of implementation of this suggestion. The findings are in line with existing research by Rasoolimanesh et al. (2020), who provide an extensive list of indicators covering aspects of transparency and inclusivity in destination governance. Moreover, Byrd (2007) collected a number of indicators that measure stakeholder participation in sustainable tourism development. The identification of indicators relevant to host communities using participative community workshops followed by a criteria-based expert validation (H2) scored the highest overall potential rating in both rounds. Lupoli et al. (2015), Lupoli and Morse (2015) and Reed et al. (2006) cover this exact methodology in various studies. The general idea of H2 is also closely linked to the approach H4 proposed by Cloquell-Ballester et al. (2006). Technically and based on the data analysis, H4 and /or H5 could form part of a hybrid methodology. Conceptually, both approaches are fairly similar except for the consultation of residents or representatives of civil society at the end (only H4). Consequently, when it comes to hybridizing approaches, the combination of H1, H2 and H4 is most expedient and has the ability to integrate the best suggestions from all three concepts, including suggestions from H5.

Concerning the criteria-based expert validation, results from Table 3 can form a solid basis. Regarding the format for involving the host community, innovative approaches such as those proposed in section 2 of this paper should be considered. Most of them will rely on the use of intermediary groups as proposed in approach H6. The gap between local communities with a low level of formal, scientific knowledge and the experts with a high level of knowledge of this nature presents a core challenge (Lupoli et al., 2015). This is where the facilitator must succeed in integrating the two sets of knowledge by providing impulses without preventing the organic emergence of knowledge from the group (Bell & Morse, 2018). In this context, studies on transdisciplinary research methods provide a valuable resource for future investigation.

Generally, the merits of blending elements from top-down, bottom-up and hybridized approaches are not only recognized in the literature (Lupoli & Morse, 2015; Wong, 2006) but were also echoed in the contributions of participants. In line with the call for “methodical flexibility and triangulation” by Reed et al. (2006, p. 415) a synthesized hybrid suggestion of H1, H2 and H4 based on workshops with a facilitator and ensuring the integration of participatory STIs in the final set is quite conceivable. The combination of elements thus not only exceeds the substantive requirement for a solid SA but additionally contributes to normative goals such as community empowerment, acceptance and ownership and to procedural goals such as policy alignment and political

support (Waas et al., 2014). The increasing need for public participation has also been actively debated within the regenerative tourism field. Among other pillars, this approach centers around stimulating collaboration and partnerships between destination stakeholders through equal and diverse participation (Bellato et al., 2022). These principles are also expressed in the Sustainable Development Goals in the form of SDG 17—partnerships for the goals.

At this point, limitations of the research need to be acknowledged. Certain commonalities between the proposed hybrid methodologies must be recognized, however, displaying the methodological plurality was intended to raise awareness of the range of approaches. Moreover, like every other research method, the Delphi survey is not exempt from methodical shortcomings (Landeta, 2006). Even if the selection of experts is based on recognized identification methods, biases of the researcher cannot be ruled out (Mauksch et al., 2020). Likewise, experts' own bias when completing the survey must be acknowledged as part of the "limitations of human judgment processes" (Mauksch et al., 2020, p. 4). Nevertheless, the pre-test, the verified choice of experts, the quality and stability of the panel, the high-quality comments gathered from participants, the high degree of consensus and overall convergence in opinion between rounds paired with the clear description of survey procedure and data analysis and the comparison with existing literature strengthen the validity of the results (Landeta, 2006). The work's contribution to the debate on STI development can thus be acknowledge in three primary ways. Firstly, this study employs a literature-review to re-structure the debate, facilitating an understanding of the complex threefold trade-off and illustrating the variety of advantages and disadvantages of each approach, which have so far only been elucidated in an isolated manner and in lengthy textual statements. Moreover, the debate is enriched by integrating and translating approaches developed and concepts investigated in environmental, urban and regional planning studies to the tourism context. Secondly, in a first, representatives of all parties were brought to the same table to set a common direction for the future planning and development of STIs. The Delphi survey highlights the importance of each interest group, confirms that the gap between them can be bridged and reinforces that the merit of a collaborative STI development process, which is moderated by participants' motivation, opportunity and ability to participate, exceeds the intended purpose of a sound SA by providing further benefits such as community ownership, capacity building and political support. Thirdly, this study provides conceptual clarification by comparing previously used and developed approaches, combining them in a differentiated assessment. Potential approaches, formats and tools are identified, evaluated and critically discussed to map out a viable path for STI planning and development.

As described, the findings obtained in this study pose several implications for theory and practice. It would be necessary for future researchers to refine and verify these results by further exploring hybridized approaches and by putting them to practice in different tourism contexts. A potential application could be to run two processes in parallel and then cross reference and evaluate them. Concerning the implications for destination managers and policy makers, the results show that STI development methods need to be chosen in view of the context of application, the goal of assessment and the geographical scale. This choice needs to be guided by considerations of practicability, feasibility and meaningfulness and can be based on the hybrid methodologies and formats proposed in this paper.

It became clear, that it is imperative to involve all stakeholders in the dialogue. Putting communities at the heart of the STI development process will foster social learning not only among residents and local entrepreneurs but also among decision-makers and scientists. The hybrid methodologies proposed enable a comprehensive understanding of the destination and underline that long-term sustainable destination management can only be achieved by moving away from tokenism towards genuine stakeholder engagement.

Disclosure statement

The author declares no conflict of interest.

ORCID

Elena Eckert  <http://orcid.org/0000-0002-2617-5453>

References

- Agrusa, J., & Albieri, G. (2011). Community empowered tourism development: A case study. In E. Laws, H. Richins, J. Agrusa, & N. Scott (Eds.), *Tourist destination governance: Practice, theory and issues* (pp. 117–133). CABI. <https://doi.org/10.1079/9781845937942.0117>
- Andes, L., Lützkendorf, T., & Ströbele, B. (2019). *Methodensammlung zur Nachhaltigkeitsbewertung: Grundlagen, Indikatoren, Hilfsmittel*. Karlsruher Institut für Technologie – KIT. <http://www.oew.kit.edu/downloads/Methodensammlung%20zur%20Nachhaltigkeitsbewertung.pdf>
- Arnstein, S. R. (1969). A ladder of citizen participation. *Journal of the American Institute of Planners*, 35(4), 216–224. <https://doi.org/10.1080/01944366908977225>
- Asmelash, A., & Kumar, S. (2019). Assessing progress of tourism sustainability: Developing and validating sustainability indicators. *Tourism Management*, 71, 67–83. <https://doi.org/10.1016/j.tourman.2018.09.020>
- Balas, Martin, & Abson, David J. (2022). Characterising and identifying gaps in sustainability assessments of tourism - a review. *Tourism Management Perspectives*, 43, 101004. <http://dx.doi.org/10.1016/j.tmp.2022.101004>
- Balas, Martin, & Abson, David J. (2022). Characterising and identifying gaps in sustainability assessments of tourism - a review. *Tourism Management Perspectives*, 43, 101004. <http://dx.doi.org/10.1016/j.tmp.2022.101004>
- Bell, S., & Morse, S. (2018). Participatory approaches for the development and evaluation of sustainability indicators. In S. Bell, & S. Morse (Eds.), *Routledge handbook of sustainability indicators* (pp. 188–203). Routledge.
- Bellato, L., Frantzeskaki, N., & Nygaard, C. A. (2022). Regenerative tourism: A conceptual framework leveraging theory and practice. *Tourism Geographies*, 1–21. <https://doi.org/10.1080/14616688.2022.2044376>
- Bello, F. G., Carr, N., & Lovelock, B. (2016). Community participation framework for protected area-based tourism planning. *Tourism Planning & Development*, 13(4), 469–485. <https://doi.org/10.1080/21568316.2015.1136838>
- Benedjma, I., & Mahimoud, A. (2020). Applying the MOA (motivation-opportunity-ability) model for the evaluation of residents' participation in built heritage rehabilitation: The case of constantine. *Journal of Cultural Heritage Management and Sustainable Development*, 11(1), 18–38. <https://doi.org/10.1108/JCHMSD-08-2018-0055>
- Blancas, F. J., Lozano-Oyola, M., González, M., Guerrero, F. M., & Caballero, R. (2011). How to use sustainability indicators for tourism planning: The case of rural tourism in Andalusia (Spain). *Science of the Total Environment*, 412–413, 28–45. <https://doi.org/10.1016/j.scitotenv.2011.09.066>

- Bramwell, B., & Lane, B. (2011). Critical research on the governance of tourism and sustainability. *Journal of Sustainable Tourism*, 19(4-5), 411–421. <https://doi.org/10.1080/09669582.2011.580586>
- Byrd, E. T. (2007). Stakeholders in sustainable tourism development and their roles: Applying stakeholder theory to sustainable tourism development. *Tourism Review*, 62(2), 6–13. <https://doi.org/10.1108/16605370780000309>
- Castellani, V., & Sala, S. (2010). Sustainable performance index for tourism policy development. *Tourism Management*, 31(6), 871–880. <https://doi.org/10.1016/j.tourman.2009.10.001>
- Choi, H. C., & Sirakaya, E. (2006). Sustainability indicators for managing community tourism. *Tourism Management*, 27(6), 1274–1289. <https://doi.org/10.1016/j.tourman.2005.05.018>
- Cloquell-Ballester, V.-A. [Vicente-Agustín], Cloquell-Ballester, V.-A. [Victor-Andrés], Monderde-Díaz, R., & Santamarina-Siurana, M.-C. (2006). Indicators validation for the improvement of environmental and social impact quantitative assessment. *Environmental Impact Assessment Review*, 26(1), 79–105. <https://doi.org/10.1016/j.eiar.2005.06.002>
- Dajani, J. S., Sincoff, M. Z., & Talley, W. K. (1979). Stability and agreement criteria for the termination of Delphi studies. *Technological Forecasting and Social Change*, 13(1), 83–90. [https://doi.org/10.1016/0040-1625\(79\)90007-6](https://doi.org/10.1016/0040-1625(79)90007-6)
- Diduck, A. (2010). Incorporating participatory approaches and social learning. In B. Mitchell (Ed.), *Resource and environmental management in Canada: Addressing conflict and uncertainty* (4th ed., pp. 495–525). Oxford University Press.
- Diéguez-Castrillón, M. I., Gueimonde-Canto, A., & Rodríguez-López, N. (2021). Sustainability indicators for tourism destinations: Bibliometric analysis and proposed research agenda. *Environment, Development and Sustainability*, 24(3), 11548–11575. <https://doi.org/10.1007/s10668-021-01951-7>
- Doke, E. R., & Swanson, N. E. (1995). Decision variables for selecting prototyping in information systems development: A Delphi study of MIS managers. *Information & Management*, 29(4), 173–182. [https://doi.org/10.1016/0378-7206\(95\)00021-N](https://doi.org/10.1016/0378-7206(95)00021-N)
- Domingues, A. R., Lozano, R., & Ramos, T. B. (2018). Stakeholder-driven initiatives using sustainability indicators. In S. Bell, & S. Morse (Eds.), *Routledge handbook of sustainability indicators* (pp. 379–391). Routledge.
- Erdmenger, E., & Kagermeier, A. (2020). Participatory Destination Governance and other Pipe Dreams: A Study of What Host Communities Actually Want - and What They Don't. *Berichte. Geographie Und Landeskunde*.
- Erdmenger, E. C. (2022). The end of participatory destination governance as we thought to know it. *Tourism Geographies*, 1–23. <http://dx.doi.org/10.1080/14616688.2022.2086904>
- European Commission. (2016). *The European Tourism Indicator System: ETIS toolkit for sustainable destination management*. Publications Office.
- Farrell, T. A., & Marion, J. L. (2002). The protected area visitor impact management (PAVIM) framework: A simplified process for making management decisions. *Journal of Sustainable Tourism*, 10(1), 31–51. <https://doi.org/10.1080/09669580208667151>
- Fraser, E. D. G., Dougill, A. J., Mabee, W. E., Reed, M., & McAlpine, P. (2006). Bottom up and top down: Analysis of participatory processes for sustainability indicator identification as a pathway to community empowerment and sustainable environmental management. *Journal of Environmental Management*, 78(2), 114–127. <https://doi.org/10.1016/j.jenvman.2005.04.009>
- Garnåsjordet, P. A., Aslaksen, I., Giampietro, M., Funtowicz, S., & Ericson, T. (2012). Sustainable development indicators: From statistics to policy. *Environmental Policy and Governance*, 22(5), 322–336. <https://doi.org/10.1002/eet.1597>
- Ghoochani, M. O., Ghanian, M., Khosravipour, B., & Crofts, J. C. (2020). Sustainable tourism development performance in the wetland areas: A proposed composite index. *Tourism Review*, 75(5), 745–764. <https://doi.org/10.1108/TR-02-2019-0061>
- Giannarou, L., & Zervas, E. (2014). Using Delphi technique to build consensus in practice. *International Journal of Business Science and Applied Management* 9(2):65–82.
- Gkoumas, A. (2019). Evaluating a standard for sustainable tourism through the lenses of local industry. *Heliyon*, 5(11), e02707. <https://doi.org/10.1016/j.heliyon.2019.e02707>

- Gracht, H. A. v. d. (2012). Consensus measurement in Delphi studies. *Technological Forecasting and Social Change*, 79(8), 1525–1536. <https://doi.org/10.1016/j.techfore.2012.04.013>
- Green, H., Hunter, C., & Moore, B. (1990). Application of the Delphi technique in tourism. *Annals of Tourism Research*, 17(2), 270–279. [https://doi.org/10.1016/0160-7383\(90\)90087-8](https://doi.org/10.1016/0160-7383(90)90087-8)
- Hackett, S., Masson, H., & Phillips, S. (2006). Exploring consensus in practice with youth who are sexually abusive: Findings from a Delphi study of practitioner views in the United Kingdom and the republic of Ireland. *Child Maltreatment*, 11(2), 146–156. <https://doi.org/10.1177/1077559505285744>
- Häder, M. (2014). *Delphi-Befragungen: Ein Arbeitsbuch (3. Aufl.). Lehrbuch*. Springer VS.
- Holman, N. (2009). Incorporating local sustainability indicators into structures of local governance: A review of the literature. *Local Environment*, 14(4), 365–375. <https://doi.org/10.1080/13549830902783043>
- Hung, K., Sirakaya-Turk, E., & Ingram, L. J. (2011). Testing the efficacy of an integrative model for community participation. *Journal of Travel Research*, 50(3), 276–288. <https://doi.org/10.1177/0047287510362781>
- Impink, E., & Gaynor, K. M. (2010). Understanding sustainability through traditional maasai pastoral systems in southern Kenya. *Consilience: The Journal of Sustainable Development*, 4(1), 167–180. <https://doi.org/10.7916/consilience.v0i4.4541>
- Ivars-Baidal, J. A., Celdrán-Bernabeu, M. A., Femenia-Serra, F., Perles-Ribes, J. F., & Giner-Sánchez, D. (2021). Measuring the progress of smart destinations: The use of indicators as a management tool. *Journal of Destination Marketing & Management*, 19(1), 100531. <https://doi.org/10.1016/j.jdmm.2020.100531>
- Janoušková, S., Hák, T., & Moldan, B. (2018). Relevance - A neglected feature of sustainability indicators. In S. Bell, & S. Morse (Eds.), *Routledge handbook of sustainability indicators* (pp. 477–493). Routledge.
- Kaynak, E., & Macaulay, J. A. (1984). The Delphi technique in the measurement of tourism market potential. *Tourism Management*, 5(2), 87–101. [https://doi.org/10.1016/0261-5177\(84\)90056-6](https://doi.org/10.1016/0261-5177(84)90056-6)
- Ko, T. G. (2005). Development of a tourism sustainability assessment procedure: A conceptual approach. *Tourism Management*, 26(3), 431–445. <https://doi.org/10.1016/j.tourman.2003.12.003>
- Kristjánsdóttir, K. R., Ólafsdóttir, R., & Ragnarsdóttir, K. V. (2017). Stakeholder participation in developing sustainability indicators for a European Northern periphery tourism system. *The Journal of Rural and Community Development*, 12(2-3), 210–235.
- Laimer, P. (2017). *Tourism Indicators for Monitoring the SGDs*. https://webunwto.s3-eu-west-1.amazonaws.com/imported_images/48592/laimer_conf2017manila_central_paper.pdf
- Landeta, J. (2006). Current validity of the Delphi method in social sciences. *Technological Forecasting and Social Change*, 73(5), 467–482. <https://doi.org/10.1016/j.techfore.2005.09.002>
- Lantz, B. (2013). Equidistance of Likert-type scales and validation of inferential methods using experiments and simulations. *The Electronic Journal of Business Research Methods*, 11(1), 16–28.
- Lee, C.-F., & King, B. (2009). A determination of destination competitiveness for Taiwan's hot springs tourism sector using the Delphi technique. *Journal of Vacation Marketing*, 15(3), 243–257. <https://doi.org/10.1177/1356766709104270>
- Lupoli, C. A., & Morse, W. C. (2015). Assessing the local impacts of volunteer tourism: Comparing Two unique approaches to indicator development. *Social Indicators Research*, 120(2), 577–600. <https://doi.org/10.1007/s11205-014-0606-x>
- Lupoli, C. A., Morse, W. C., Bailey, C., & Schelhas, J. (2014). Assessing the impacts of international volunteer tourism in host communities: A new approach to organizing and prioritizing indicators. *Journal of Sustainable Tourism*, 22(6), 898–921. <https://doi.org/10.1080/09669582.2013.879310>
- Lupoli, C. A., Morse, W. C., Bailey, C., & Schelhas, J. (2015). Indicator development methodology for volunteer tourism in host communities: Creating a low-cost, locally applicable, rapid assessment tool. *Journal of Sustainable Tourism*, 23(5), 726–747. <https://doi.org/10.1080/09669582.2015.1008498>
- Marques, A. S., Ramos, T. B., Caeiro, S., & Costa, M. H. (2013). Adaptive-participative sustainability indicators in marine protected areas: Design and communication. *Ocean & Coastal Management*, 72, 36–45. <https://doi.org/10.1016/j.ocecoaman.2011.07.007>

- Mascarenhas, A., Nunes, L. M., & Ramos, T. B. (2014). Exploring the self-assessment of sustainability indicators by different stakeholders. *Ecological Indicators*, 39, 75–83. <https://doi.org/10.1016/j.ecolind.2013.12.001>
- Mauksch, S., Gracht, H. A. v. d., & Gordon, T. J. (2020). Who is an expert for foresight? A review of identification methods. *Technological Forecasting and Social Change*, 154(2), 119982. <https://doi.org/10.1016/j.techfore.2020.119982>
- Miller, C. A. (2005). New civic epistemologies of quantification: Making sense of indicators of local and global sustainability. *Science, Technology, & Human Values*, 30(3), 403–432. <http://dx.doi.org/10.1177/0162243904273448>
- Miller, G. (2001). The development of indicators for sustainable tourism: Results of a Delphi survey of tourism researchers. *Tourism Management*, 22(4), 351–362. [https://doi.org/10.1016/S0261-5177\(00\)00067-4](https://doi.org/10.1016/S0261-5177(00)00067-4)
- Miller, G., & Twining-Ward, L. (2005). *Monitoring for a sustainable tourism transition: The challenge of developing and using indicators*. CABI Pub. <http://site.ebrary.com/lib/librarytitles/Doc?id=10157962>
- Mitchell. (1991). The Delphi technique: An exposition and application. *Technology Analysis & Strategic Management*, 3(4), 333–358. <https://doi.org/10.1080/09537329108524065>
- Moscardo, G. (2011). The role of knowledge in good governance for tourism. In E. Laws, H. Richins, J. Agrusa, & N. Scott (Eds.), *Tourist destination governance: Practice, theory and issues* (pp. 67–80). CABI. <https://doi.org/10.1079/9781845937942.0067>
- Moscardo, G. (2019). Rethinking the role and practice of destination community involvement in tourism planning. In K. Andriotis, D. Styliadis, & A. Weidenfeld (Eds.), *Contemporary geographies of leisure, tourism and mobility. Tourism policy and planning implementation: Successes and failures* (pp. 36–52). Routledge.
- Murry, J. W., & Hammons, J. O. (1995). Delphi: A versatile methodology for conducting qualitative research. *The Review of Higher Education*, 18(4), 423–436. <https://doi.org/10.1353/rhe.1995.0008>
- Niemeijer, D., & Groot, R. S. d. (2008). A conceptual framework for selecting environmental indicator sets. *Ecological Indicators*, 8(1), 14–25. <https://doi.org/10.1016/j.ecolind.2006.11.012>
- Novakowski, N., & Wellar, B. (2008). Using the Delphi technique in normative planning research: methodological design considerations. *Environment and Planning A: Economy and Space*, 40(6), 1485–1500. <https://doi.org/10.1068/a39267>
- Parkins, J. R., Stedman, R. C., & Varghese, J. (2001). Moving towards local-level indicators of sustainability in forest-based communities: A mixed-method approach. *Social Indicators Research*, 56(1), 43–72. <https://doi.org/10.1023/A:1011886609486>
- Rametsteiner, E., Pülzl, H., Alkan-Olsson, J., & Frederiksen, P. (2011). Sustainability indicator development—science or political negotiation? *Ecological Indicators*, 11(1), 61–70. <https://doi.org/10.1016/j.ecolind.2009.06.009>
- Ramos, T. B. (2019). Sustainability assessment: Exploring the frontiers and paradigms of indicator approaches. *Sustainability*, 11(3), 824. <https://doi.org/10.3390/su11030824>
- Rasoolimanesh, S. M., Ramakrishna, S., Hall, C. M., Esfandiari, K., & Seyfi, S. (2020). A systematic scoping review of sustainable tourism indicators in relation to the sustainable development goals. *Journal of Sustainable Tourism*, 1–21. <https://doi.org/10.1080/09669582.2020.1775621>
- Reed, M. S. (2008). Stakeholder participation for environmental management: A literature review. *Biological Conservation*, 141(10), 2417–2431. <https://doi.org/10.1016/j.biocon.2008.07.014>
- Reed, M. S., Fraser, E. D., & Dougill, A. J. (2006). An adaptive learning process for developing and applying sustainability indicators with local communities. *Ecological Economics*, 59(4), 406–418. <https://doi.org/10.1016/j.ecolecon.2005.11.008>
- Reihanian, A., Hin, T. W., Kahrom, E., & Binti Mahmood, N. Z. (2015). A framework for implementing sustainable tourism in national parks of Iran: Development and use of sustainable tourism indicators in Boujagh National Park, Iran. *Caspian Journal of Environmental Sciences*, 13(1), 41–52.
- Saarinen, J. (2020). Tourism and sustainable development goals: Research on sustainable tourism geographies. In J. Saarinen (Ed.), *Tourism and sustainable development goals: Research on sustainable tourism geographies* (pp. 1–10). Routledge.

- Saufi, A., O'Brien, D., & Wilkins, H. (2014). Inhibitors to host community participation in sustainable tourism development in developing countries. *Journal of Sustainable Tourism*, 22(5), 801–820. <https://doi.org/10.1080/09669582.2013.861468>
- Scheibe, M., Skutsch, M., & Schofer, J. (1975). Experiments in Delphi methodology. In H. A. Linstone, & M. Turoff (Eds.), *The Delphi method: Techniques and applications: techniques and applications* (3rd ed., pp. 262–287). Addison-Wesley.
- Scheyvens, R. (2018). Linking tourism to the sustainable development goals: A geographical perspective. *Tourism Geographies*, 20(2), 341–342. <https://doi.org/10.1080/14616688.2018.1434818>
- Schianetz, K., & Kavanagh, L. (2008). Sustainability indicators for tourism destinations: A complex adaptive systems approach using systemic indicator systems. *Journal of Sustainable Tourism*, 16(6), 601–628. <https://doi.org/10.1080/09669580802159651>
- Sinclair, A. J., Diduck, A. P., & Vespa, M. (2015). Public participation in sustainability assessment: Essential elements, practical challenges and emerging directions. In A. Morrison-Saunders, J. Pope, & A. Bond (Eds.), *Research handbooks on impact assessment. Handbook of sustainability assessment* (pp. 349–374). Edward Elgar Publishing.
- Sirakaya, E., Jamal, T. B., & Choi, H. C. (2001). Developing indicators for destination sustainability. In D. Weaver (Ed.), *The Encyclopedia of Ecotourism* (pp. 411–432). CABI Pub.
- Sullivan, G. M., & Artino, A. R. (2013). Analyzing and interpreting data from Likert-type scales. *Journal of Graduate Medical Education*, 5(4), 541–542. <https://doi.org/10.4300/JGME-5-4-18>
- Tanguay, G. A., Rajaonson, J., & Therrien, M.-C. (2013). Sustainable tourism indicators: Selection criteria for policy implementation and scientific recognition. *Journal of Sustainable Tourism*, 21(6), 862–879. <https://doi.org/10.1080/09669582.2012.742531>
- Thees, H., Pechlaner, H., Olbrich, N., & Schuhbert, A. (2020). The living Lab as a tool to promote residents' participation in destination governance. *Sustainability*, 12(3), 1120. <https://doi.org/10.3390/su12031120>
- Thomas, D. S. G., & Twyman, C. (2004). Good or bad rangeland? Hybrid knowledge, science, and local understandings of vegetation dynamics in the Kalahari. *Land Degradation & Development*, 15(3), 215–231. <https://doi.org/10.1002/ldr.610>
- Torres-Delgado, A., & Palomeque, F. L. (2014). Measuring sustainable tourism at the municipal level. *Annals of Tourism Research*, 49, 122–137. <https://doi.org/10.1016/j.annals.2014.09.003>
- Torres-Delgado, A., & Saarinen, J. (2014). Using indicators to assess sustainable tourism development: A review. *Tourism Geographies*, 16(1), 31–47. <https://doi.org/10.1080/14616688.2013.867530>
- Valentin, A., & Spangenberg, J. H. (2000). A guide to community sustainability indicators. *Environmental Impact Assessment Review*, 20(3), 381–392. [https://doi.org/10.1016/S0195-9255\(00\)00049-4](https://doi.org/10.1016/S0195-9255(00)00049-4)
- Waas, T., Hugé, J., Block, T., Wright, T., Benitez-Capistros, F., & Verbruggen, A. (2014). Sustainability assessment and indicators: Tools in a decision-making strategy for sustainable development. *Sustainability*, 6(9), 5512–5534. <https://doi.org/10.3390/su6095512>
- Waligo, V. M., Clarke, J., & Hawkins, R. (2013). Implementing sustainable tourism: A multi-stakeholder involvement management framework. *Tourism Management*, 36, 342–353. <https://doi.org/10.1016/j.tourman.2012.10.008>
- White, V., McCrum, G., Blackstock, K. L., & Scott, A. (2006). *Indicators and sustainable tourism: Literature review*. Article The Macaulay Institute.
- Wondirad, A., Tolkach, D., & King, B. (2020). Stakeholder collaboration as a major factor for sustainable ecotourism development in developing countries. *Tourism Management*, 78, 104024. <https://doi.org/10.1016/j.tourman.2019.104024>
- Wong, C. (2006). *Indicators for urban and regional planning: The interplay of policy and methods. The RTP library series: Vol. 11*. Routledge.
- WTO. (2004). *Indicators of sustainable development for tourism destinations: A guidebook*.

Title

Towards a future conceptualisation of destination resilience: exploring the role of actors, agency and resilience narratives

Eva Posch¹, Elena Eckert², Benni Thiebes³

Abstract

Purpose of this paper:

Despite the widespread use and application of resilience, much uncertainty about the conceptualisation and operationalisation in the context of tourism destinations still exists. The purpose of this paper is to provide a conceptual elaboration on destination resilience and to introduce a model for an improved understanding of the concept.

Design/methodology/approach

Taking a conceptual research approach, this paper seeks to untangle the fuzziness surrounding the destination and resilience concept by providing a new interpretation that synthesizes theories and concepts from various academic disciplines. It analyses the current debate to derive theoretic baselines and conceptual elements that subsequently inform the development of a new ‘Destination Resilience Model’.

Findings:

The contribution advances the debate by proposing three key themes for future resilience conceptualizations: 1) the value of an actor-centered and agency-based resilience perspective; 2) the importance of the dynamic nature of resilience and the (mis)use of measurement approaches; 3) the adoption of a dualistic resilience perspective distinguishing specified and general resilience. Building on these propositions, we introduce a conceptual model that innovatively links elements central to the concepts of destination and risk and combines different narratives of resilience.

Originality/value:

The contribution advances the debate surrounding destination resilience by critically examining the conceptualization and operationalization of destination resilience within previous research and by subsequently proposing a ‘Destination Resilience Model’ that picks up central element of the three new frontiers identified in the conceptually driven review. The innovative integration strengthens the comprehension of the resilience concept at destination level and supports building future capacities to manage immediate adverse impacts as well as novel and systemic risks.

Keywords:

destination, resilience, assessment, agency, risk, crises

Article Type:

Conceptual Paper

¹ University of Innsbruck, Department of Geography, Innsbruck, Austria, eva.posch@uibk.ac.at

² Leuphana University Lüneburg, School of Management and Technology, Lüneburg, Germany

³ German Committee for Disaster Reduction, Bonn, Germany

1. Introduction

With the increasing complexity and uncertainty of global events, the interest in resilience is steadily growing. From a global to a local level, resilience has been highlighted as a valuable bridging concept to deal with risks, uncertainty and change and has become an integral element in policies and frameworks (e.g., Paris Climate Accord, SFDRR, Urban Agenda, SDGs). Similar to the developments in other research disciplines, resilience has quickly emerged as a fashionable and widely adopted concept in tourism studies (Butler, 2017; Hall *et al.*, 2018a; Lew and Cheer, 2017; Saarinen and Gill, 2019). However, the issue of conceptualizing let alone measuring resilience has been a controversial and much disputed subject among tourism scholars (Prayag, 2018). Despite significant progress on the harmonization of the resilience concept in multiple disciplines, tourism-related studies are criticized for not having reached a coherent usage of key terms and related concepts when addressing resilience (Aliperti *et al.*, 2019). This suggests that different epistemologies, origins, and applications of resilience are often neglected in tourism research where resilience seems to be used rather as a buzzword. Thus, not surprisingly, research on resilience has been deemed fuzzy and its conceptual and practical relevance has been questioned (Brand and Jax, 2007; Cote and Nightingale, 2012). These inadequacies can also be transferred to the realm of tourism destinations which have become a popular frame for analysing resilience in recent years (e.g., Amore *et al.*, 2018; Basurto-Cedeño and Pennington-Gray, 2016; Hartman, 2018). Lately, destinations and their resilience have particularly moved into focus with the near-ubiquitous presence of crises such as the emergence of the COVID-19 pandemic, floods, bush fires, economic crises, and political unrest in many prime tourism destinations. However, the destination as unit of analysis raises further conceptual difficulties regarding resilience with much debate surrounding the questions: What is a destination?, Who or what in a destination should be resilient against what? And, what does ‘being resilient’ exactly imply? Finding adequate answers to these questions by conceptualizing and subsequently operationalizing destination resilience is impeded by the fact that the conceptual background of resilience is so unprecise in language and theory (Agrawal *et al.*, 2012).

In this contribution, we take up the call for “greater academic attention” to destination resilience and its foundations as expressed by Gössling and Higham (2021, p. 1176). The aim of this conceptual paper is to unravel the fuzziness surrounding the resilience concepts by tracing narratives for the conceptualization and operationalization of destination resilience in different scholarly disciplines. Building on that, we identify theoretical baselines and conceptual elements associated with epistemologies and resilience application from different research traditions. We conceptually advance the resilience debate in tourism studies by presenting an advanced ‘Destination Resilience Model’ that integrates these elements to offer leverage for better understanding destination resilience. We intend to challenge the understanding of resilience as a static or measurable trait and introduce the ideas of actor-centrism and human agency to inform future research on destination resilience. Employing a conceptual research design, we seek to generate a new interpretation of destination resilience by synthesizing theories and concepts from multidisciplinary bodies of knowledge. In the following section 2, we introduce our methodological approach, before we provide a comprehensive overview of the origin of destination resilience as well as previous difficulties of conceptualizing and operationalizing resilience in a destination

context. Section 4 then presents the model and its elements before concluding with an outlook of potential applications in tourism destinations.

2. Methodological approach

We consider our research conceptual and position it in the subjectivist/interpretivist research paradigm. We analyze existing literature to map out the key conceptual elements that are associated with (destination) resilience and employed within different disciplinary research traditions. Unlike a systematic review that entails an exhaustive literature search with pre-defined inclusion criteria to compile a dataset for analysis, a conceptual paper selects background literature based on its relevance to the argument, aiming to enhance the understanding of the concepts being explored (Kirillova and Yang, 2022). Taking a conceptual research approach, the concept of resilience itself is the object of our research (Xin *et al.*, 2013). Having clearly articulated destination resilience as our focal point of research, we focus on literature about resilience and associated concepts such as risk, hazards, vulnerability and exposure as well as literature about tourism destinations and the meaning and application of resilience within tourism studies. Doing so, we analyze the origin, meaning and use of these related concepts and look at how they have evolved over time and within different contexts (Wallerstein, 2009). Moreover, in the conceptualization and operationalization of resilience at destination level is analyzed. As outlined in the introduction, definitions of resilience are fuzzy and incoherent across scales and disciplines. To unravel the fuzziness, first, we set the baseline for the debate on destination resilience by tracing back origins, conceptualization and limitations of resilience research in two disciplinary traditions. As revealed from the literature, research on resilience from a socio-ecological systems and disaster risk perspective show to be most influential in a tourism context. The theoretical baseline developed across section 2 is therefore mainly based on insights from these two strands of research. Following the conceptual methodology, we proceed to summarize patterns and themes that form the theoretical baseline for the identification of central concepts in the context of destination resilience. Each concepts entails different features, assumptions and roles that inform the overall understanding of the phenomenon of destination resilience. To enhance the readers understanding of the dynamic nature of the resilience concept paired with the complex characteristics of a destination system, we propose a model that combines the elements identified in the analysis. The model links concepts and their interrelations to provide a comprehensive understanding of the phenomenon not in a causal but in an interpretative approach (Jabareen, 2009). Doing so, it acts as visualized representation of this study's main theoretical concepts (Miles and Huberman, 2009). As described by Maxwell (2013) the elements of the visualized map are extracted from existing sources however the structure and overall coherence of the model is the contribution of the researcher. The visual illustration shows how the concepts identified from the literature are interconnected. In line with the conceptual research approach of this study, the model development took place based on the insights from literature on the topic of destination resilience which was consulted to identify relevant and related concepts and to determine interrelationships between them (van der Waldt, 2020). As opposed to engaging the *available* literature on the topic, the research centers around the *relevant* literature regarding the concepts identified (van der Waldt, 2020). Following this approach, the suitability and relevance of literature is prioritized over the endeavor to provide an all-encompassing review. Given the vast number of publications on resilience in the context of tourism, we do not make the claim to be exhaustive regarding all conceptual aspects. The literature has been critically examined

to identify gaps and the meaning and evolution of key concepts, however, as the review is conceptually driven it more so centers around mapping different approaches to resilience.

3. Decoding the essence of resilience, destinations and inherent conceptual limitations

3.1. Two narratives of (destination) resilience

The concept of resilience gained prominence in the 1970s in the field of ecology with its initial focus on emphasizing a system's ability to return to an equilibrium after a perturbation (Folke *et al.*, 2010). Definitions of resilience evolved from the focus on 'engineering resilience', to a broader perspective that considers multiple stable states while maintaining functionality (Folke *et al.*, 2010). The ecological definition of resilience emphasizes the adaptability of complex systems, contrasting with the maintenance of a steady-state seen in engineering systems (Adger, 2000). Further on, the integration of social dimensions led to the emergence of social-ecological resilience as a boundary object between natural and social sciences which explicitly incorporates adaptability and transformability, signifying the continuous change, adaptation, and transformation of a system (Carpenter *et al.*, 2012). During the course of this development, the concept of resilience has been adopted by various disciplines and research fields whose underlying paradigms led to diverse and sometimes contradictory understandings of the concept. When taking a closer look at resilience research from a disciplinary angle, two research traditions which appear relevant to destination resilience stand out: research on social-ecological systems and research on disaster risk which conceptualize and apply the resilience concept quite differently:

Social-ecological systems (SES) research is a field within sustainability science that seeks to address pressing sustainability issues by understanding the complex interactions between social and ecological components (Biggs *et al.*, 2022). SES research is characterized by its focus on the dynamic connections, interactions, and interdependencies between people and nature (Heslinga *et al.*, 2017; Reyers *et al.*, 2022). The analysis of resilience in SES scholarship aims to address resilience as an emergent system property of a SES to cope with and respond to disturbances and change while continuing to adapt or transform (e.g., identifying tipping points or regime shifts) (Walker *et al.*, 2004). In that understanding, resilience is often directed towards disturbances that cannot be identified, or risks that are novel, unforeseen, or surprising (Carpenter *et al.*, 2012; Folke *et al.*, 2010). Previous research has identified a number of generic principles (also referred to as conditions, essentials, or qualities) that aim to enhance the overall resilience of a SES (R. Biggs *et al.*, 2012; Preiser *et al.*, 2018). Close commonalities between the outlined concepts can be identified in the tourism context including five recurring themes (e.g., D. Biggs *et al.*, 2012; Hartman, 2018; Orchiston *et al.*, 2016; Lee *et al.*, 2013): 1) diversity, variety, redundancy, 2) social networks, connectivity, partnerships, 3) reflexivity, information, awareness, 4) flexibility, innovation, creativity, adaptability, learning and 5) participation, cohesion, equity, inclusion, collective action. However, the application of general resilience in practical settings and the operationalization of these wide-ranging principles have been challenging (Sweetapple *et al.*, 2022). While the so-called **general resilience narrative** has value in addressing risks on a broader scale, they may not provide concrete guidance for designing and implementing specific actions and strategic policies (Carpenter *et al.*, 2012). This limitation hinders the translation of theoretical understanding into actionable measures. However, resilience analysis from a SES research tradition offers advantages in

emphasizing the inseparability of people and nature and studying the complex dynamics of social-ecological systems across multiple levels and scales and in overcoming the limitations of traditional disciplinary approaches that are often confined to a single level or scale (Biggs *et al.*, 2022; Reyers *et al.*, 2022).

In scholarship on disaster risk (DR) on the other hand, resilience has been historically linked to the concept of risk (i.e., the potential for adverse impacts) and its components (hazards, vulnerability, and exposure) (Keck and Sakdapolrak, 2013). Disaster risk research is a multidisciplinary field that studies the causes, consequences, and management options of hazards and risks. It seeks to understand the complex interactions between hazards, human activities and social systems, as well as to develop effective strategies to reduce risks and potential disasters by studying various aspects, including hazard assessment, vulnerability analysis, and the underlying social, economic, and environmental dimensions (Wisner *et al.*, 2012). The focus of resilience in DR research is on the capacities or abilities of people, households, or communities to proactively or reactively manage specific risks and is closely linked to vulnerability (Adger, 2000). The management of risk refers to actors' ability to adapt, prevent, recover, prepare and respond when facing a risk. The precise relationship with vulnerability has been intensively discussed in the literature: While some scholars understand resilience as the flipside of vulnerability (Manyena, 2006; Wilson, 2012), others see resilience as a sub-component of vulnerability (Turner, 2003), or compare it with adaptive capacity (Adger, 2000; Birkmann *et al.*, 2013), while yet others perceive resilience and vulnerability as being separate but closely related concepts (Cutter *et al.*, 2008). Resilience analysis in DR scholarship delves into understanding the factors and underlying root causes that make people vulnerable, exposed or resilient to hazardous events and processes in the first place. This perspective on so-called **specified resilience** clearly defines who or what should be resilient against what while acknowledging complex contexts and causes of risks. However, it has been criticized for being too narrow in its analysis, especially when dealing with novel risks and focusing predominantly on reactive capacities (Folke *et al.*, 2010).

In tourism studies, research has predominantly adopted a general perspective on resilience conceptualising resilience on different systemic levels and studying interactions within a SES (Amore *et al.*, 2018; D. Biggs *et al.*, 2012; Hall *et al.*, 2018; Hall *et al.*, 2023; Heslinga, *et al.*, 2017; Prayag, 2018, 2023; Postma and Yeoman, 2021; Ruiz-Ballesteros, 2011). Besides the systemic approach to studying resilience, this line of research is often concerned with measuring systems' equilibria, threshold limits, tipping points and overall susceptibility to change (Espiner and Becken, 2013; Prayag, 2023). Contrary to this perspective, there are also scholars from tourism studies that rather pick up on conceptual elements associated with DR scholarship such as vulnerability, exposure and adaptive capacity (Basurto-Cedeño and Pennington-Gray, 2016; Bethune *et al.*, 2022; Cahyanto *et al.*, 2021; Orchiston, 2013). Most prominently, the Destination Sustainability Framework (DSF) (Calgaro *et al.*, 2013) integrates resilience as adaptive capacity within the notion of vulnerability. Several follow-up studies build on the DSF focusing on different factors that influence destination vulnerability (Calgaro *et al.*, 2014; Kennedy *et al.*, 2020; Pyke *et al.*, 2021, van der Veecken *et al.*, 2016). Due to the diverse interpretations and applications of resilience, many tourism resilience studies fall short of clearly positioning their concepts in the overall academic resilience debate.

Table 1: Model implications from social-ecological systems and disaster risk research

Theoretical baseline	Implication for Destination Resilience Model
Social-ecological systems research	Change and complexity 5 recurring general resilience principles: <ol style="list-style-type: none"> 1. Diversity and redundancy 2. Social networks 3. Reflexivity and awareness 4. Flexibility, adaptability and learning 5. Participation and collective action
Disaster risk research	Strong emphasis on risk and dynamic risk environment (hazards, vulnerability, and exposure) Capacities and abilities of people to adapt, prevent, recover, prepare and respond

3.2. What is a tourism destination or whose resilience are we looking at?

Within the academic discourse, resilience is a concept that elicits various interpretations, particularly in the context of destinations. However, a critical aspect that demands further exploration is how best to conceptualize destination resilience. This issue directs attention to the central question raised by Steve Carpenter *et al.* (2001, p. 777): “resilience of what and resilience to what?”. In addressing this fundamental inquiry, we begin by focusing on the latter component. Although the range of shocks or stressors that a destination may encounter is highly diverse, the overarching implication in the endeavor to build resilience is to avoid adverse impacts. In this context, we distinguish between different dimensions of adverse impacts for a tourism destination that include but are not restricted to impacts on human lives (i.e., safety, loss of lives, health), destination image (i.e., reputation, competitiveness), built environment and infrastructure, community wellbeing, economy (i.e., loss of income, loss of employment opportunities, worker migration to other sectors) and on environment (i.e., loss of natural attractions, environmental degradation, loss of resources) (Becken *et al.*, 2019; OECD, 2017; UNDRR, 2015). Now looking at the first part of the question, there is a relation to the notion that destinations seem to “lie at the heart of much thinking about tourism and resilience” (Hall *et al.*, 2018b, p. 104). Although the term destination resilience seems to be the answer to the question of the unit of analysis of the assessment, on closer examination it is not clear whose resilience is actually being studied. For resilience studies, specific boundaries of the scale of analysis must be made explicit (Carpenter *et al.*, 2001; Quinlan *et al.*, 2016) which is specifically relevant in the destination context. In the pursuit of contributing to the debate on destination resilience in this paper, we first need to address a critical question: what is a destination?

While tourism destinations are key concepts in tourism research and the debate over their conceptualization has evolved significantly, their definition is still subject to controversy (Jovicic, 2016; Pearce, 2014; Saraniemi and Kylänen, 2011). Early definitions of the term were characterized by their geographical focus, regarding destinations as spatial units with defined territorial

boundaries (Davidson and Maitland, 1997). The geographical extension, however, remained subject to the interpretation of the observer comprising everything from a municipality up to a transnational area. Shortcomings of this approach became evident quickly, because social, economic and environmental problems occur independently of human-made boundaries and thus call for flexibility in the choice of spatial scale in the context of tourism planning and development (Fraser *et al.*, 2006). This is why the 'systemic approach' gained popularity during the mid-1990s, leading to a more holistic interpretation of the destination concept (Jovicic, 2016). Further on, destinations became conceptualized as networks and connected organizations from the public and private sector that are interrelated and connected through a web of social linkages (Baggio and Cooper, 2010; Nunkoo, 2017). This notion was further extended by recognizing destinations as complex adaptive systems (Baggio and Sainaghi, 2011; Postma and Yeoman, 2021) whose elements are related in a non-linear and dynamic fashion that react to external and internal factors in an unpredictable manner (Jovicic, 2016). The system has a specific function and purpose, which in the context of tourism is to provide the tourism product and the multitude of elements in the tourism system are directly or indirectly related to each other (Hall *et al.*, 2018a). The systemic structure depends on its internal organization and the connections between the different actors and stakeholders. Recent approaches unite existing tourism destination conceptualization from different disciplinary backgrounds by developing frameworks that integrate economic, physical, geographical, marketing-oriented, customer-oriented and cultural aspects of a destination (Cooper and Hall, 2008; Pearce, 2014; Saraniemi and Kylänen, 2011).

Despite these common denominators, there is still room for interpretation in the context of destination resilience when answering the key question 'who should be resilient?' It is easy to answer 'all the components of the destination' but the beach will not protect itself from erosion nor will the estuaries protect themselves from sedimentation. Consequently, to assess destination resilience and to clarify whose resilience we are looking at, we first need to unpack the black box of destinations (Baghchi *et al.*, 1998). The solution may be found in Prayag's (2018, p. 134) assertion: "resilience of a destination is often a matter of the resilience of its constituents". Amore *et al.* (2018, p. 240) extend this notion by stating that "the resilience of individuals, organizations, and other stakeholders, as well as resilience of subsystems, will be key determinants of the resilience of the system as a whole, together with the structure of the system". In line with Baggio and Cooper (2010, p. 1759) who state, „stakeholders are the people who matter to a system“, human actors and their functional interrelationships on the individual, organizational and societal level play a pivotal role in tourism destinations which enables the flow of people, money, and resources that are required for the functioning of the tourism system in the first place.

Table 2: Model implications from tourism destinations and adverse impacts

Theoretical baseline	Implication for Destination Resilience Model
Tourism destinations	Acknowledgement of a destination as a multi-layered complex system Human actors as main constituents of the destination system
Adverse impacts on components of the destinations	Adverse impacts on environment, lives and safety, image, infrastructure, well-being and economy

3.3. Resilience is not a number but about people’s agency

With the rise of the resilience concept as an effective way to address risk, calls for building resilience by operationalizing the concept at destination level and by providing tourism actors with actionable measures, emerged. Imitating successful practices to operationalize the normative concept of sustainability through numerical assessment, similar concepts of measurement surfaced in the context of resilience. Similar to the practice of sustainability assessment, using resilience as an analytical concept mostly refers to the employment of quantitative standardized methods and indicators with fixed numerical values, which serve as proxies for resilience (Quinlan *et al.*, 2016). Most studies draw on a set of socio-demographic, economic, institutional, physical, or environmental parameters rooted in capitals and assets, when it comes to the development of said indicators (Cai *et al.*, 2018). However, these approaches for conceptualizing resilience in a destination context often remain one-dimensional by only using scorecards (Basurto-Cedeño and Pennington-Gray, 2016), resilience factors (Della Corte *et al.*, 2021; Filimonau and Coteau, 2020; Pyke *et al.*, 2021), or indicators (Brown *et al.*, 2019; Orchiston *et al.*, 2016, Malone and Brenkert, 2008). Thus, it is advisable to approach resilience measurements in tourism studies with care (Hall *et al.*, 2023; Prayag, 2023). The basic assumption often remains the same: resilience is defined as a destination’s fixed trait, property, or attribute which can be statically measured in a particular place at a particular point in time ignoring the dynamic nature of resilience.

Reducing resilience to these asset-based indicators in the pursue of generating a measurable outcome inevitably results in simplifying the resilience concept to a mere numerical value that is incapable of answering the question: resilience of what to what? This numerical interpretation of resilience gives insufficient attention to change and complexity making it incompatible with the processual and dynamic perspective on resilience (Amore *et al.*, 2018; Pyke *et al.*, 2021; Quinlan *et al.*, 2016). Walker and Salt (2012, p. 67) stress that "resilience is not a single number or a result" but always contextual depending on the system under study and the purpose of the investigation. Hence, there is a need to move beyond the narrow emphasis of traditional metrics and static indicators (Bristow and Healy, 2014). Likewise, a common pitfall in the context of resilience frameworks is the idea to find a multipurpose approach. Prayag (2019, p. 57) even describes the one-size-fits-all approach to building and maintaining resilience as “futile”. This measuring approach inevitably leads to the formulation of desired (and measurable) outcomes and the

development of general recommendations that enable non-resilient destinations to become more resilient (Rogers, 2013). However, this logic of benchmarking implies that the unit under investigation - ‘the tourism destination’ - behaves as uniform, homogeneous agent with a shared instrumental rationality leaving no room for highly divergent aims and priorities that might exist within or in a destination (Darnhofer *et al.*, 2016; Hartmann, 2011; Pain and Levine, 2012).

Thus, a significant number of scholars from various disciplines emphasize that the focus must lie on actors and their agency in the context of adversities (Béné *et al.*, 2012; Bohle *et al.*, 2009; Bristow and Healy, 2014; Lorenz, 2013; Obrist, 2016; Posch *et al.*, 2020). An agency-based perspective on resilience recognizes that resilience is not a fixed property or stationary trait, but the ability and willingness of people to take certain actions in the context of disturbances and risks (Posch *et al.*, 2020). Despite efforts in different disciplines to refocus on people’s agency in the resilience debate, the majority of tourism studies continue to prioritize conventional static capitals- and asset-based approaches, while only few emphasize the levels of individuals and the dynamic interplay of agency and structure structure-agency interface (Hartmann, 2023). A perspective of resilience as agency implies that tourism destinations consist most and foremost of human actors that are able and willing to take proactive and reactive actions. These actors must engage into a participatory resilience building process by taking actions that simultaneously strengthen generic principles and respond to specific risks.

Table 3: Model implications from an agency-based resilience perspective

Theoretical baseline	Implication for Destination Resilience Model
Agency-based resilience perspective	Central role of human actors as carriers of resilience

4. A model for an improved understanding of destination resilience

Building on the theoretical baselines outlined in section 3, we propose a Destination Resilience model that combines the resultant model implications from table 1, 2 and 3. The model not only links elements central to the concepts of destinations and risk but also acknowledges and combines the two narratives of resilience (Figure 1).

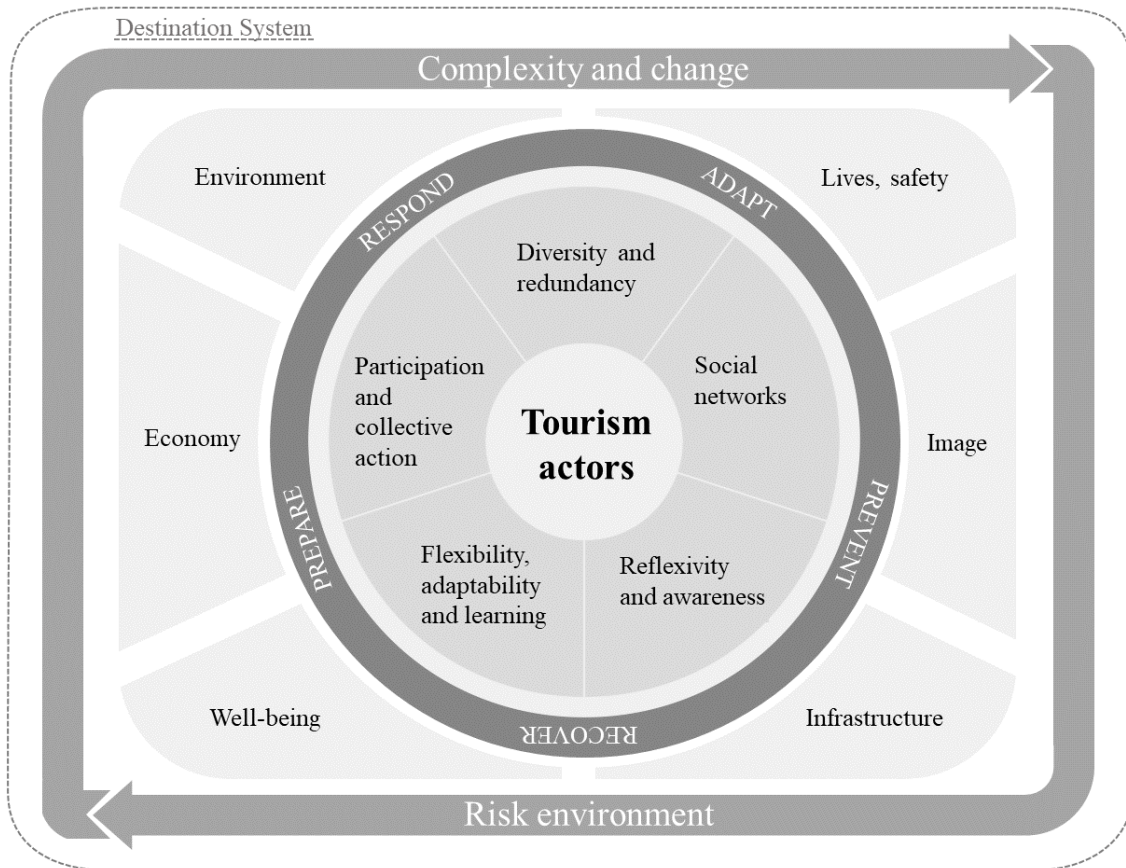


Figure 1 Destination Resilience Model (based on DDKV and Futouris 2022)

The contextual frame in which the model is situated is the tourism destination system. Due to the dynamic risk environment, complexity and change, tourism destinations are exposed and vulnerable to a variety of hazards that may result in adverse impacts for the destination concerning impacts on human lives, destination image, built environment and infrastructure, community wellbeing, economy and environment. The risk environment includes sudden shocks and slow ongoing stressors and are influenced by different risk drivers such as global climate change, poverty or inequality. To prevent the occurrence of said adverse impacts, building resilience is proposed as an effective way to address risks. The backdrop of framing resilience as agency to take action, necessarily results in an actor-centred perspective. The core of the model therefore depicts an actor-centred and agency-based perspective on destination resilience. The current literature that specifically addresses destination resilience often disregards the systemic and adaptive perspective on the tourism destinations. We can only pay sufficient attention to changes in the system, if we recognize the human actors embedded in it. In a destination context, this means that the system is influenced by characteristics of its individual members, the tourism actors, and systemic or global characteristics. This framing of destinations informs the choice of method for assessing resilience:

destinations should not be seen as a black box but instead their constituents should be investigated, e.g., by studying the individuals in the destination system and the global destination system characteristics, including the environment. As illustrated in section 3.3., tourism actors are the carriers of any resilient action as their ability and willingness to act in the context of disturbances and risks determines the resilience level of the destination system as a whole. Resilience should not be recognized as a fixed trait or property but rather as the ability of actors to take actions. This ability is largely shaped by enabling environments in the destinations that are conducive to the actors' agency. The actors' agency is an emergent property of the collaboration within the destination system.

Picking up on the distinction between generic and specified resilience respectively rooted in socio-ecological systems research and research on disaster risk, the proposed framework presents principles that allows for building resilience on a broader basis as well as specific risk management practices to proactively and reactively respond to risk. Starting with the generic approach to building resilience, it is worth taking a step back and looking at the types of risks that are intended to be mitigated through generic resilience principles (see table 1). Some risks are hard to define because causal links between different elements of risk (hazard, exposure, vulnerability) or secondary effects are hardly distinguishable. These risks are often systemic – characterized by their high complexity, uncertainty, and ambiguity – or novel, thus, provoking wide-ranging, transnational, and cross-sectoral impacts for a system (Renn *et al.*, 2020). The complexity of these risks makes it difficult to address them with traditional risk management approaches. Consequently, a focus on general resilience narratives proves to be more fruitful in this context. As outlined in section 3.1., the general resilience narrative builds on generic principles and conditions that are less context dependent and thus universally applicable (R. Biggs *et al.*, 2012). The principles identified from the literature are taken up in the inner circle of the resilience model, surrounding the tourism actors. As these principles are normative, they can only guide the development of strategies for different actors in the tourism system but must be translated into operational action individually. This translation process yet again emphasizes the importance of actors' agency in the context of adversities. The meaning of each principle is strongly dependent on the actor and the risk to be managed. To illustrate this mechanism, we provide an example for the first principle. What does 'being diverse and redundant' mean for a tour operator? This can entail addressing diverse target groups, catering to different source markets, spreading offers over the season or building multiple streams of income.

Contrary to the rational underpinning generic resilience, in some cases, risk elements (hazards, vulnerabilities, exposure) can be clearly designated and causal relationships can be established. Consequently, entry points to build destination resilience are primarily found in specified narratives of resilience research. These conventional risks are best addressed with risk management practices (see outer circle in dark grey) that help to prevent risks (e.g., coastal reinforcement, trail marking, economic incentives), adapt to and reduce the impacts of existing risks (e.g., land use planning, building codes, early warning systems, awareness or education programmes), prepare for risks (e.g., planning for emergency shelter sites, evacuation routes, emergency energy and water sources), or recover from disasters (e.g., emergency funds).

Despite the different points of departure and theoretical focuses of SES and DR, an integration of specified and general resilience narratives can contribute to the understanding of destination resilience. We argue that the integration of both narratives into daily tourism practice might be a

fruitful addition to the discussion on destination resilience, allowing for the ability to address known risks immediately and effectively without losing sight of novel and systemic risks.

5. Conclusion

This contribution set out to gain a better understanding of the conceptualization of destination resilience. Through a conceptually driven literature review, it becomes evident that resilience within the destination context has been conceptualized differently across various research traditions leading to an incoherent usage of key terms and diverse applications depending on the scale of analysis and the discipline in which it is studied. We review the origin, meaning and use of resilience and map out central conceptual elements associated with epistemologies from different research traditions that are then combined in a new model. Our model underscores the importance of framing resilience as an agency of tourism actors in a destination and challenges the notion of resilience as a static or measurable trait. The innovative link of conceptual elements from SES and DRR scholarship illustrated through general and specified resilience narratives demonstrates how a combined narrative can foster the ability to respond to a particular risk while also mitigating systemic and unforeseen risks.

Nevertheless, before highlighting the contributions of our research, we must acknowledge that conceptual research is subject to certain limitations. The conceptual model was developed through the exploration of existing concepts from the literature and their interpretive structuring in a new model. Accordingly, the research is not based on empirical data to support the proposed construct. We acknowledge that conceptual research is subjective in nature and researchers' personal biases in the interpretation of theoretical baselines and concepts and their reflections in the model cannot be ruled out. To validate the constructs proposed in this article we have developed operational strategies from the conceptual model introduced herein that allow for the assessment of destination resilience. This proposed assessment methodology was empirically tested in three case studies in an affiliated research project (see Eckert and Posch, n.y.). The cross-reference between these two studies therefore allows for conclusions about the generalizability of the model and provides insights if the model holds true in specific destination contexts or under varying conditions. Lastly, we acknowledge that resilience is a highly dynamic and steadily evolving concept and that our conceptual research can only provide insights that reflect the past debate on the topic. Nevertheless, we want to highlight the advantages of employing a conceptual research approach for structuring a multidisciplinary debate and for laying the groundwork for further exploration. On that note, the presented reflections about the conceptual background of resilience and the resultant 'Destination Resilience Model' conceptually advances the resilience debate in tourism studies by:

- 1) tracing **narratives** for the conceptualization and operationalization of destination resilience in different research disciplines and their underlying paradigms
- 2) identifying the value of an **actor**-centered perspective
- 3) reflecting the dynamic nature of resilience and the (mis)use of **measurement** approaches in tourism destinations;
- 4) presenting a **conceptual model** that integrates resilience concepts from different epistemologies in two disciplinary traditions to offer analytical leverage for better understanding destination resilience;

By providing conceptual clarity on the key terms and elements associated with resilience, we demonstrate how the integration of generic and specified narratives of resilience can enhance the comprehension of destination resilience, accounting for its complexities and ever-evolving dynamics. In the face of an increasing prevalence of complex and interconnected risks, understanding resilience will become a key skill for destination researchers and managers in the future as it enables them to effectively respond to future changes and navigate uncertainties (Hall *et al.*, 2023). By adopting an actor-centered and agency-oriented perspective, our model focuses on how destinations can be equipped with capacities to take actions to better cope with adversity and develop strategic risk management approaches, particularly in the face of climate change-related challenges. Our research supports the shift from static approaches and reactive risk management towards holistic resilience thinking that allows to strategically address a wide range of risks.

Building upon our framework, future research endeavors could focus on deriving an assessment methodology that aligns with an agency-based and actor-oriented understanding of resilience. To bridge the gap between conceptualization and operationalization, assessment methodologies that are applicable to a broad spectrum of spatial scales, destination types and risk profiles thereby breaking down the concept of resilience to smaller scale realities are needed. Recognizing the inherent challenges in measuring resilience, such an approach should be contextual, participatory, and dynamic, accounting for the adaptive and complex nature of the concept. Additionally, further investigation is necessary to conduct a detailed review of the generic resilience principles and their operationalization. In this vein, future studies could explore the integration of strategies to manage systemic risks alongside conventional risks, as part of resilience-building actions.

Our contribution advances the discourse surrounding destination resilience by critically examining the unit and scope of analysis in destination resilience studies and questioning prevailing approaches that seek to measure the resilience of specific destinations. Instead, we argue for a greater emphasis on understanding the factors that promote resilient action. After all, the central goal is to foster a comprehensive understanding that encompasses the multifaceted nature of resilience by creating awareness, ownership, and responsibilities to enhance destination resilience in the long run instead of reducing resilience to a mere number.

References

- Adger, W. N. (2000). Social and ecological resilience: are they related? *Progress in Human Geography*, 24(3), 347–364. <https://doi.org/10.1191/030913200701540465>
- Agrawal, A., Lemos, M.C., Orlove, B., and Ribot, J. (2012). Cool heads for a hot world—Social sciences under a changing sky. *Global Environmental Change* 22: 329–331.
- Aliperti, G., Sandholz, S., Hagenlocher, M., Rizzi, F., Frey, M., and Garschagen, M. (2019). Tourism, crisis, disaster: An interdisciplinary approach. *Annals of Tourism Research*, 79(5), 102808. <https://doi.org/10.1016/j.annals.2019.102808>
- Amore, A., Prayag, G., and Hall, C. M. (2018). Conceptualizing Destination Resilience from a Multilevel Perspective. *TOURISM REVIEW INTERNATIONAL*, 22(3), 235–250. <https://doi.org/10.3727/154427218X15369305779010>
- Baggio, R., and Cooper, C. (2010). Knowledge transfer in a tourism destination: the effects of a network structure. *The Service Industries Journal*, 30(10), 1757–1771. <https://doi.org/10.1080/02642060903580649>
- Baggio, R., and Sainaghi, R. (2011). Complex and chaotic tourism systems: towards a quantitative approach. *International Journal of Contemporary Hospitality Management*, 23(6), 840–861. <https://doi.org/10.1108/09596111111153501>
- Baghchi, D. K., Blaikie, P., Cameron, J., Chattopadhyay, M., Gyawali, N., and Seddon, D. (1998). Conceptual and methodological challenges in the study of livelihood trajectories: case-studies in Eastern India and Western Nepal. *Journal of International Development*, 10, 453–468. [https://doi.org/10.1002/\(SICI\)1099-1328\(199806\)10:4<453::AID-JID538>3.0.CO;2-Q](https://doi.org/10.1002/(SICI)1099-1328(199806)10:4<453::AID-JID538>3.0.CO;2-Q)
- Basurto-Cedeño, E. M., and Pennington-Gray, L. (2016). Tourism disaster resilience scorecard for destinations (TDRSD): The case of Manta, Ecuador. *International Journal of Tourism Cities*, 2(2), 149–163. <https://doi.org/10.1108/IJTC-01-2016-0002>
- Becken, S., Hess, J. S., Scott, D., and Wisansing, J. (2019). Climate Change Risk Assessment for Thailand's Tourism Sector - Research Report. https://www.griffith.edu.au/__data/assets/pdf_file/0033/1173579/Climate-Change-Risk-Assessment-for-Thailands-Tourism-Sector_.pdf
- Béné, C., Godfrey Wood, R., Newsham, A., and Davies, M. (2012). Resilience:: New utopia or new tyranny? Reflection about the potentials and limits of the concept of resilience in relation to vulnerability reduction programmes (IDS working paper No. 405). Brighton. Institute of Development Studies.
- Bethune, E., Buhalis, D., and Miles, L. (2022). Real time response (RTR): Conceptualizing a smart systems approach to destination resilience. *Journal of Destination Marketing & Management*, 23, 100687. <https://doi.org/10.1016/j.jdmm.2021.100687>
- Biggs, D., Hall, C. M., and Stoeckl, N. (2012). The resilience of formal and informal tourism enterprises to disasters: Reef tourism in Phuket, Thailand. *Journal of Sustainable Tourism*, 20(5), 645–665. <https://doi.org/10.1080/09669582.2011.630080>

- Biggs, R., Schlüter, M., Biggs, D., Bohensky, E. L., BurnSilver, S., Cundill, G., Dakos, V., Daw, T. M., Evans, L. S., Kotschy, K., Leitch, A. M., Meek, C., Quinlan, A., Raudsepp-Hearne, C., Robards, M. D., Schoon, M. L., Schultz, L., and West, P. C. (2012). Toward Principles for Enhancing the Resilience of Ecosystem Services. *Annual Review of Environment and Resources*, 37(1), 421–448. <https://doi.org/10.1146/annurev-environ-051211-123836>
- Biggs, R., Vos, A. de, Preiser, R., Clements, H., Maciejewski, K., and Schlüter, M. (Eds.) (2022). *The Routledge handbook of research methods for social-ecological systems*. London, New York.
- Bohle, H.-G., Etzold, B., and Keck, M. (2009). Resilience as Agency. *IHDP Update*, 2, 8–13.
- Brand, F. S., and Jax, K. (2007). Focusing the Meaning(s) of Resilience: Resilience as a Descriptive Concept and a Boundary Object. *Ecology and Society*, 12(1). <http://www.ecologyandsociety.org/vol12/iss1/art23/>
- Bristow, G., and Healy, A. (2014). Regional Resilience: An Agency Perspective. *Regional Studies*, 48(5), 923–935. <https://doi.org/10.1080/00343404.2013.854879>
- Brown, D. D., and Kulig, J. C. (1996). The concepts of resiliency: Theoretical lessons from community research. *Health and Canadian Society*, 4(1), 29–52.
- Brown, N. A., Feldmann-Jensen, S., Rovins, J. E., Orchiston, C., and Johnston, D. (2021). Exploring disaster resilience within the hotel sector: A case study of Wellington and Hawke's Bay New Zealand. *International Journal of Disaster Risk Reduction*, 55(1), 102080. <https://doi.org/10.1016/j.ijdr.2021.102080>
- Brown, N. A., Orchiston, C., Rovins, J. E., Feldmann-Jensen, S., and Johnston, D. (2018). An integrative framework for investigating disaster resilience within the hotel sector. *Journal of Hospitality and Tourism Management*, 36(1), 67–75. <https://doi.org/10.1016/j.jhtm.2018.07.004>
- Brown, N. A., Rovins, J. E., Feldmann-Jensen, S., Orchiston, C., and Johnston, D. (2019). Measuring disaster resilience within the hotel sector: An exploratory survey of Wellington and Hawke's Bay, New Zealand hotel staff and managers. *International Journal of Disaster Risk Reduction*, 33(4), 108–121. <https://doi.org/10.1016/j.ijdr.2018.09.014>
- Butler, R. W. (Ed.). (2017). *Tourism and Resilience*. CABI.
- Cahyanto, I., and Pennington-Gray, L. (2017). Toward A Comprehensive Destination Crisis Resilience Framework. *Travel and Tourism Research Association: Advancing Tourism Globally*, 21. <https://scholarworks.umass.edu/ttra/2017/AcademicPapersOral/21>
- Cai, H., Lam, N. S., Qiang, Y., Zou, L., Correll, R. M., and Mihunov, V. (2018). A synthesis of disaster resilience measurement methods and indices. *International Journal of Disaster Risk Reduction*, 31, 844–855. <https://doi.org/10.1016/j.ijdr.2018.07.015>
- Calgaro, E., Dominey-Howes, D., and Lloyd, K. (2014). Application of the Destination Sustainability Framework to explore the drivers of vulnerability and resilience in Thailand following the 2004 Indian Ocean Tsunami. *Journal of Sustainable Tourism*, 22(3), 361–383. <https://doi.org/10.1080/09669582.2013.826231>

- Calgaro, E., Lloyd, K., and Dominey-Howes, D. (2013). From vulnerability to transformation: A framework for assessing the vulnerability and resilience of tourism destinations. *Journal of Sustainable Tourism*, 22(3), 341–360. <https://doi.org/10.1080/09669582.2013.826229>
- Carpenter, S., Arrow, K., Barrett, S., Biggs, R., Brock, W., Crépin, A.-S., Engström, G., Folke, C., Hughes, T., Kautsky, N., Li, C.-Z., McCarney, G., Meng, K., Mäler, K.-G., Polasky, S., Scheffer, M., Shogren, J., Sterner, T., Vincent, J., . . . Zeeuw, A. (2012). General Resilience to Cope with Extreme Events. *Sustainability*, 4(12), 3248–3259. <https://doi.org/10.3390/su4123248>
- Carpenter, S., Walker, B., Anderies, J. M., and Abel, N. (2001). From Metaphor to Measurement: Resilience of What to What? *Ecosystems*, 4(8), 765–781. <https://doi.org/10.1007/s10021-001-0045-9>
- Cooper, C., and Hall, C. M. (2008). *Contemporary Tourism: An International Approach*. Taylor and Francis Group. <https://ebookcentral.proquest.com/lib/kxp/detail.action?docID=330227>
- Cote, M., and Nightingale, A. J. (2012). Resilience thinking meets social theory: Situating social change in socio-ecological systems (SES) research. *Progress in Human Geography*, 36(4), 475–489. <https://doi.org/10.1177/0309132511425708>
- Cutter, S. L., Barnes, L., Berry, M., Burton, C., Evans, E., Tate, E., and Webb, J. (2008). A place-based model for understanding community resilience to natural disasters. *Global Environmental Change*, 18(4), 598–606. <https://doi.org/10.1016/j.gloenvcha.2008.07.013>
- Darnhofer, I., Lamine, C., Strauss, A., and Navarrete, M. (2016). The resilience of family farms: Towards a relational approach. *Journal of Rural Studies*, 44, 111–122. <https://doi.org/10.1016/j.jrurstud.2016.01.013>
- Davidson, R., and Maitland, R. (1997). *Tourism destinations*. London Hodder and Stoughton.
- Della Corte, V., Del Gaudio, G., Sepe, F., and Luongo, S. (2021). Destination Resilience and Innovation for Advanced Sustainable Tourism Management: A Bibliometric Analysis. *Sustainability*, 13(22), 12632. <https://doi.org/10.3390/su132212632>
- DKKV and Futouris. (2022). Resilience Analysis Guideline for Tourism Destinations - Introducing key concepts and methodological steps to analyse destination resilience. https://www.dkkv.org/fileadmin/user_upload/DKKV_Futouris_Resilience_Guideline.pdf
- Eckert, E. & Posch, E. (n.y.). From Global Frameworks to Local Meanings: Building Resilience for Sustainable Destinations. In Pillmayer, M.; Hansen, M.; Karl, M. (Ed.), *Tourism destination development: A geographic perspective on destination management and tourist demand*. De Gruyter Oldenbourg [in publication]
- Espiner, S., and Becken, S. (2014). Tourist towns on the edge: Conceptualising vulnerability and resilience in a protected area tourism system. *Journal of Sustainable Tourism*, 22(4), 646–665. <https://doi.org/10.1080/09669582.2013.855222>
- Filimonau, V., and Coteau, D. de (2020). Tourism resilience in the context of integrated destination and disaster management (DM 2). *International Journal of Tourism Research*, 22(2), 202–222. <https://doi.org/10.1002/jtr.2329>

- Folke, C., Carpenter, S. R., Walker, B., Scheffer, M., Chapin, T., and Rockström, J. (2010). Resilience Thinking: Integrating Resilience, Adaptability and Transformability. *Ecology and Society*, 15(4). <http://www.ecologyandsociety.org/vol15/iss4/art20/>
- Fraser, E. D. G., Dougill, A. J., Mabee, W. E., Reed, M., and McAlpine, P. (2006). Bottom up and top down: Analysis of participatory processes for sustainability indicator identification as a pathway to community empowerment and sustainable environmental management. *Journal of Environmental Management*, 78(2), 114–127. <https://doi.org/10.1016/j.jenvman.2005.04.009>
- Gössling, S., and Higham, J. (2021). The Low-Carbon Imperative: Destination Management under Urgent Climate Change. *Journal of Travel Research*, 6(60), 1167–1179. <https://doi.org/10.1177/00472875209336>
- Hall, C. M., Prayag, G., and Amore, A. (2018a). *Tourism and Resilience*. Channel View Publications. <https://doi.org/10.21832/HALL6300>
- Hall, C. M., Prayag, G., and Amore, A. (2018b). *Tourism and resilience: Individual, organisational and destination perspectives*. Channel View Publications.
- Hall, C. M., Safonov, A., and Naderi Koupaei, S. (2023). Resilience in hospitality and tourism: issues, synthesis and agenda. *International Journal of Contemporary Hospitality Management*, 35(1), 347–368. <https://doi.org/10.1108/IJCHM-11-2021-1428>
- Hartman, S. (2018). Resilient tourism destinations? Governance implications of bringing theories of resilience and adaptive capacity to tourism practice. In E. Innerhofer, M. Fontanari, and H. Pechlaner (Eds.), *Destination Resilience* (pp. 66–76). Routledge. <https://doi.org/10.4324/9780203701904-5>
- Hartman, S. (2023). Destination governance in times of change: a complex adaptive systems perspective to improve tourism destination development. *Journal of Tourism Futures*, 9(2), 267–278. <https://doi.org/10.1108/JTF-11-2020-0213>
- Hartmann, T. (2011). Contesting land policies for space for rivers - rational, viable, and clumsy floodplain management. *Journal of Flood Risk Management*, 4(3), 165–175. <https://doi.org/10.1111/j.1753-318X.2011.01101.x>
- Heslinga, J.H., Groote, P., and Vanclay, F. (2017). Using a social-ecological systems perspective to understand tourism and landscape interactions in coastal areas. *Journal of Tourism Futures*, 3(1), 23–38. <https://doi.org/10.1108/JTF-10-2015-0047>
- Jabareen, Y. (2009). Building a Conceptual Framework: Philosophy, Definitions, and Procedure. *International Journal of Qualitative Methods* 8(4), 49–62. DOI: 10.1177/160940690900800406.
- Jovicic, D. Z. (2016). Key issues in the conceptualization of tourism destinations. *Tourism Geographies*, 18(4), 445–457. <https://doi.org/10.1080/14616688.2016.1183144>
- Keck, M., and Sakdapolrak, P. (2013). What is social resilience? Lessons learned and ways forward. *Erdkunde*, 67(1), 5–19. <https://doi.org/10.3112/erdkunde.2013.01.02>
- Kennedy, V., Crawford, K. R., Main, G., Gauci, R., and Schembri, J. A. (2020). Stakeholder's (natural) hazard awareness and vulnerability of small island tourism destinations: A case study of Malta. *Tourism Recreation Research*, 1–17. <https://doi.org/10.1080/02508281.2020.1828554>

- Kirillova, K. and Yang, I.-C. M. (2022). The curse of conceptual research in tourism. *Annals of Tourism Research* 93, 103368. <https://doi.org/10.1016/j.annals.2022.103368>
- Lee, A. V., Vargo, J., and Seville, E. (2013). Developing a Tool to Measure and Compare Organisations' Resilience. *Natural Hazards Review*, 14(1), 29–41, DOI: 10.1061/(ASCE)NH.1527-6996.0000075.
- Lew, A. A., and Cheer, J. M. (2017). *Tourism Resilience and Adaptation to Environmental Change*. Routledge. <https://doi.org/10.4324/9781315463971>
- Lorenz, D. F. (2013). The diversity of resilience: Contributions from a social science perspective. *Natural Hazards*, 67(1), 7-24. <http://dx.doi.org/10.1007/s11069-010-9654-y>
- Malone, E. L. and Brenkert, A. L. (2008). Uncertainty in resilience to climate change in India and Indian states. *Climatic Change*, 91(3-4), 451–476. <https://doi.org/10.1007/s10584-008-9472-3>
- Manyena, S. B. (2006). The concept of resilience revisited. *Disasters*, 30(4), 433–450. <https://doi.org/10.1111/j.0361-3666.2006.00331.x>
- Maxwell, J. A. (2013). *Qualitative research design: An interactive approach* (3rd edition). *Applied social research methods series: Vol. 41*. Sage.
- Miles, M. B., and Huberman, A. M. (2009). *Qualitative data analysis: An expanded sourcebook* (2nd edition). Sage.
- Obrist, B. (2016). Social resilience and agency. Perspectives on ageing and health from Tanzania. *DIE ERDE – Journal of the Geographical Society of Berlin*, 147(4), 266–274. <https://doi.org/10.12854/erde-147-23>
- OECD. (2017). DAC Working Party on Development Finance Statistics: Proposal to Establish a Policy Marker for Disaster Risk Reduction (DRR) in the OECD DAC Creditor Reporting System (CRS).
- Orchiston, C., Prayag, G., and Brown, C. (2016). Organizational resilience in the tourism sector. *Annals of Tourism Research*, 56, 145–148. <https://doi.org/10.1016/j.annals.2015.11.002>
- Pain, A., and Levine, S. (2012). A conceptual analysis of livelihoods and resilience: addressing the 'insecurity of agency' (HPG Working Paper). Overseas Development Institute. www.odi.org.uk/hpg
- Pearce, D. G. (2014). Toward an Integrative Conceptual Framework of Destinations. *Journal of Travel Research*, 53(2), 141–153. <https://doi.org/10.1177/0047287513491334>
- Posch, E., Höferl, K. M., Steiger, R., and Bell, R. (2020). Another take on reframing resilience as agency: The Agency Towards Resilience (ATR) model. In P. P. Santos, K. Chmutina, J. von Meding, and E. Raju (Eds.), *Understanding Disaster Risk: A Multidimensional Approach* (pp. 239–255). Elsevier. <https://doi.org/10.1016/B978-0-12-819047-0.00013-5>
- Postma, A., and Yeoman, S. (2021). A systems perspective as a tool to understand disruption in travel and tourism. *Journal of Tourism Futures*, 7(1), 67-77. <https://doi.org/10.1108/JTF-04-2020-0052>

- Prayag, G. (2018). Symbiotic relationship or not? Understanding resilience and crisis management in tourism. *Tourism Management Perspectives*, 25(3), 133–135. <https://doi.org/10.1016/j.tmp.2017.11.012>
- Prayag, G. (2019). Building destination resilience through community and organizational resilience. In R. K. I. Isaac, E. Çakmak, and R. W. Butler (Eds.), *Contemporary geographies of leisure, tourism and mobility. Tourism and hospitality in conflict-ridden destinations*. Routledge.
- Prayag, G. (2023). Tourism resilience in the ‘new normal’: Beyond jingle and jangle fallacies? *Journal of Hospitality and Tourism Management*, 54, 513–520. <https://doi.org/10.1016/j.jhtm.2023.02.006>
- Preiser, R., Biggs, R., Vos, A. de, and Folke, C. (2018). Social-ecological systems as complex adaptive systems: Organizing principles for advancing research methods and approaches. *Ecology and Society*, 23(4).
- Pyke, J., Lindsay-Smith, G., Gamage, A., Shaikh, S., van Nguyen, K., Lacy, T. de, and Porter, C. (2021). Building destination resilience to multiple crises to secure tourism’s future. *Asia Pacific Journal of Tourism Research*, 26(11), 1225–1243.
- Quinlan, A. E., Berbés-Blázquez, M., Haider, L. J., Peterson, G. D., and Allen, C. R. (2016). Measuring and assessing resilience: Broadening understanding through multiple disciplinary perspectives. *Journal of Applied Ecology*, 53(3), 677–687. <https://doi.org/10.1111/1365-2664.12550>
- Renn, O., Laubichler, M., Lucas, K., Kröger, W., Schanze, J., Scholz, R. W. and Schweizer, P.-J. (2020). Systemic Risks from Different Perspectives. *Risk Analysis: An Official Publication of the Society for Risk Analysis*. Advance online publication. <https://doi.org/10.1111/risa.13657>
- Reyers, B., Moore, M.-L., Haider, L. J., and Schlüter, M. (2022). The contributions of resilience to reshaping sustainable development. In: *Nature Sustainability* 5 (8), S. 657–664. DOI: 10.1038/s41893-022-00889-6.
- Rogers, P. (2013). The Rigidity Trap in Global Resilience: Neoliberalisation Through Principles, Standards, and Benchmarks. *Globalizations*, 10(3), 383–395. <https://doi.org/10.1080/14747731.2013.787834>
- Ruiz-Ballesteros, E. (2011). Social-ecological resilience and community-based tourism. *Tourism Management*, 32(3), 655–666. <https://doi.org/10.1016/j.tourman.2010.05.021>
- Saarinen, J., and Gill, A. (Eds.). (2019). *Contemporary geographies of leisure, tourism and mobility. Resilient destinations and tourism: Governance strategies in the transition towards sustainability in tourism*. Routledge.
- Saraniemi, S., and Kylänen, M. (2011). Problematizing the Concept of Tourism Destination: An Analysis of Different Theoretical Approaches. *Journal of Travel Research*, 50(2), 133–143. <https://doi.org/10.1177/0047287510362775>
- Sweetapple, C., Fu, G., Farmani, R., and Butler, D. (2022). General resilience: Conceptual formulation and quantitative assessment for intervention development in the urban wastewater system. *Water Research*, 211, 118108. <https://doi.org/10.1016/j.watres.2022.118108>

- Turner, B. L. (2003). A framework for vulnerability analysis in sustainability science. *Proceedings of the National Academy of Sciences of the United States of America*, 100(14), 8074–8079. <https://doi.org/10.1073/pnas.1231335100>
- UNDRR (Ed.). (2015). *Sendai Framework for Disaster Risk Reduction 2015-2030*. Sendai, Japan. <https://www.undrr.org/publication/sendai-framework-disaster-risk-reduction-2015-2030>
- van der Veecken, S., Calgaro, E., Munk Klint, L., Law, A., Jiang, M., Lacy, T. de, Dominey-Howes, D., and Reis, A. C. (2016). Tourism destinations' vulnerability to climate change: Nature-based tourism in Vava'u, the Kingdom of Tonga. *Tourism and Hospitality Research*, 16(1), 50–71. <https://doi.org/10.1177/1467358415611068>
- van der Walddt, G. (2020). Constructing conceptual frameworks in social science research. *The Journal for Transdisciplinary Research in Southern Africa*, 16(1). <https://doi.org/10.4102/td.v16i1.758>
- Walker, B. H., and Salt, D. A. (2012). *Resilience practice: Building capacity to absorb disturbance and maintain function*. Island Press.
- Wallerstein, R. S. (2009). What kind of research in psychoanalytic science? *The International Journal of Psycho-Analysis*, 90(1), 109–133. <https://doi.org/10.1111/j.1745-8315.2008.00107.x>
- Wilson, G. A. (2012). Community resilience, globalization, and transitional pathways of decision-making. *Geoforum*, 43(6), 1218–1231. <https://doi.org/10.1016/j.geoforum.2012.03.008>
- Wisner, B., Gaillard, J.C., and Kelman, I. (Ed.) (2012). *The Routledge handbook of hazards and disaster risk reduction*. London, New York: Routledge.
- Xin, S., Tribe, J. and Chambers, D. (2013). Conceptual research in tourism. *Annals of Tourism Research* 41, 66–88. <https://doi.org/10.1016/j.annals.2012.12.003>

Funding and acknowledgements

This work was supported by the German Federal Ministry for Economic Cooperation and Development (BMZ) through the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) under Grant 20.1001.5-012.00.

Disclosure statement: The authors have no conflict of interest to declare.

Publication:

Eckert, E. & Posch, E. (2024): From Global Frameworks to Local Meanings: Building Resilience for Sustainable Destinations. In Pillmayer, M.; Hansen, M.; Karl, M. (Ed.), *Tourism destination development: A geographic perspective on destination management and tourist demand*. De Gruyter Oldenbourg, DOI: 10.1515/9783110794090-007

From Global Frameworks to Local Meanings: Assessing Resilience for Sustainable Destinations through the lens of Transdisciplinary Research

Elena Eckert^a, Eva Posch^b

^a Leuphana University Lüneburg, School of Management and Technology, Lüneburg, Germany, E-Mail: elena.eckert@posteo.de

^b University of Innsbruck, Department of Geography, Innsbruck, Austria, E-Mail: eva.posch@uibk.ac.at

Abstract

Tourism destinations are increasingly confronted with complex, multifaceted and interconnected risks. Building resilience is an important step to address these risks and achieve sustainable development. While global frameworks serve a guiding function, the dynamic and adaptive nature of resilience requires innovative and transformative approaches that support the operationalisation of these socio-political goals on a local level. This chapter introduces a destination resilience assessment methodology that uses a transdisciplinary research (TDR) approach to guide a process-oriented, locally contextualised and participatory resilience assessment. Drawing on evidence from three case study destinations in the Dominican Republic, Namibia and Sri Lanka, this study explores how TDR can give meaning to resilience building initiatives on a destination level. It advances resilience building from a practical and conceptual viewpoint by exploring the underlying conceptualisations of sustainability and resilience, by integrating system, target and transformative knowledge into the assessment and by critically reflecting potentials and limitations of using TDR for developing a locally meaningful resilience building strategy.

Keywords

Resilience, tourism destination, transdisciplinary research, sustainability, risk

1. Introduction

In the light of increasingly turbulent, complex and globally interconnected challenges such as those posed by climate change, global financial crises, geopolitical fallouts, biodiversity loss, or environmental pollution (Opitz-Stapleton et al., 2019; Renn et al., 2020), there is a need for innovative and transformative approaches that are capable of meeting the challenges of sustainable development (Schweizer et al., 2022). Particularly the COVID-19 pandemic has demonstrated the long-lasting and wide-ranging impacts for societies, highlighting the need for risk awareness to safeguard previous development achievements and to move closer to sustainable development goals as set out in global frameworks (Gössling & Higham, 2021). Over time, resilience has evolved as a key concept in international policy frameworks, socio-political goal setting and development ambitions to address key risks and achieve sustainable development (Reyers et al., 2022).

The tourism industry has a particular interest in safeguarding sustainable development achievements and minimising the occurrence of risk as it is dependent on intact ecosystems, global transportation and business activity as well as socio-cultural exchange. Moreover, tourism often takes place in particularly vulnerable spaces such as mountain regions, coastal zones or small island states that have an overall higher likelihood of being exposed to extreme natural events or entering a disaster situation. Particularly in tourism destinations in the Global South, existing vulnerabilities are exacerbated by a more prevailing lack of immediate coping mechanisms and long-term adaptive capacities as well as the severity of climate change impacts (Atwii et al., 2022; Scott et al., 2019). In recent years, tourism research has decidedly picked up the concept of resilience with a scholarly focus on resilience of tourism businesses (e.g., Biggs et al., 2012; Brown et al., 2018; Dahles & Susilowati, 2015; Ntounis et al., 2022), tourism-dependent communities (e.g., Bec et al., 2016; Cheer et al., 2019; Chen et al., 2020; Lew et al., 2016) and tourism destinations (e.g., Amore et al., 2018; Becken, 2013; Calgaro et al., 2014). The latter are of particular research interest for resilience building as they not only tie tourism actors together as a central entity in which the tourism product is delivered, they also represent the scale where management action takes effect and where interdependent risks are most evident (Gössling & Higham, 2021).

Normative and superordinate concepts of sustainability and resilience used in global frameworks serve a guiding function but ultimately need to be broken down to smaller spatial scales and contexts to become operationalisable. To this end, employing sustainability and resilience assessments as a means to bridge the divide between global frameworks and local realities has become a widely adopted practice. Nevertheless, particularly at destination scale, notions, conceptualisations, and operationalisations of resilience assessments often remain unclear and existing studies fall short of clearly positioning themselves in the resilience debate (Posch et al., 2023). In this chapter, we argue that while traditional assessments can be a valuable tool for measuring and promoting sustainability, the fundamental differences inherent to the concepts of sustainability and resilience call for a more dynamic and process-oriented assessment approach for the latter. The ability to effectively address risks will increasingly become a key skill for destination managers which is why operationalizing the concept of resilience with an agency-centred approach instead of static measurement will add value to destination development by translating concepts into locally relevant and actionable measures. In the pursue of addressing the dynamic nature of resilience, we challenge traditional approaches by drawing on transdisciplinary research (TDR). TDR is particularly suitable for addressing real-world problems and supporting the transformation

toward sustainable development (Sarkki et al., 2013). Moreover, TDR is characterised by its strong emphasis on context and participation and thus offers high potential for addressing resilience in a reflexive and integrative manner.

The aim of this contribution is to explore how transdisciplinary research can support destinations in understanding and addressing risks and making resilience building initiatives meaningful on a local level. In addressing this question, we discuss the conceptual baseline of resilience in destinations to achieve sustainable development and advance the topic of resilience building from a practical as well as conceptual angle by showing how transdisciplinary approaches can be applied in destination research. We introduce the value of TDR by drawing on our experiences from case studies in three destinations, Ella (Sri Lanka), the Erongo Region (Namibia) and Samaná (Dominican Republic). As part of a development cooperation project, these three specific destinations were chosen within the project countries based on their diverse risk profiles and the types of tourism they primarily cater to.

In Section 2, we begin by introducing the core concepts: sustainability as a normative socio-political goal, resilience as a prerequisite for sustainability, and TDR as a means to combine assessing and implementing resilient and sustainable development. In Section 3, we introduce the specific TDR approach that guided the resilience assessment in our three case study destinations before presenting the results of its application in section 4. Lastly, we reflect on our methodology and on the potentials of TDR to foster a contextualised application of resilience in destinations in section 5 and close the chapter with our conclusions.

2. Sustainability, resilience and the complexities of assessment

2.1. The role of resilience for the transition towards sustainability

As particularly highlighted through the COVID-19 pandemic and the increased occurrence of disasters induced by natural hazards, the concept of risk must play a central role in sustainable development. Neglecting the existence of risk and the potential consequences associated with it, not only jeopardises previous successes in the area of sustainability but also poses a threat to future efforts for sustainable development. Risk management and risk governance of existing and new risks should therefore be fully reflected and integrated in decision-making to strengthen sustainable development (GIDRM, n.y.; Opitz-Stapleton et al., 2019).

Resilience has evolved as a key concept to handle the concept of risk and make it operationalisable on a broader strategic level. Building resilience is a promising approach to address risk, particularly systemic, unforeseen and complex risks. This is why resilience has found broad application over the past years and is recognised as a valuable concept to deal with uncertainty and change (Xu et al., 2015). Although definitions of resilience differ depending on the discipline in which it is studied, a widely accepted one in the context of social systems research describes resilience as “the ability of individuals, households, communities, cities, institutions, systems and societies to prevent, resist, absorb, adapt, respond and recover positively, efficiently and effectively when faced with a wide range of risks, while maintaining an acceptable level of functioning and without compromising long-term prospects for sustainable development, peace and security, human rights and well-being for all” (UN, 2020; UN-Habitat, 2021; cf. DKKV & Futouris, 2022). This definition picks up the close link between resilience, risk and sustainable development, which acknowledges that understanding risk

is a necessary requirement for building resilience in destinations, whereas resilience is a necessary prerequisite for sustainable development.

This close link is also reflected in international policies and frameworks. Post-2015 sustainability agendas including the Paris Agreement within the United Nations Framework Convention on Climate Change (UNFCCC, 2015), the Agenda 2030 for Sustainable Development (UN, 2015), and the New Urban Agenda (UN-Habitat, 2020) pick up the concept, so do disaster risk frameworks such as the Sendai Framework for Disaster Risk Reduction (UNISDR, 2015) or the OCED Disaster Risk Reduction Marker (OECD, 2017).

Despite the merit of these frameworks of placing sustainable goalsetting at the centre of policy and governance, the challenges associated with them is that they are global in nature and aspire to be fit for universal application (Biermann et al., 2017). They are thus expected to be broken down to national and local scale and be adapted to the local context (Biermann et al., 2017). Naturally, this task is challenging as achieving the alignment and integration between frameworks such as the SDGs, national strategies and local programs is deemed critical for achieving policy coherence (Stafford-Smith et al., 2017). This is why making use of ‘assessments’ has become a key tool to operationalise normative goals such as sustainability and resilience and bridge the divide between global frameworks and local realities. Assessments, which are often characterised by the use of indicators, are employed to better understand what overarching frameworks mean locally and to guide further developments. Specifically in the context of sustainability, assessments can help to 1) give meaning to abstract concepts by breaking down the complexity, 2) inform decision-making by assessing impacts, 3) facilitate continuous learning among stakeholders and decision-makers about the concepts and 4) indicate pathways forward (Bond et al., 2012; Pope, 2006; Waas et al., 2014).

When taking a closer look at how sustainability and resilience have been operationalised in tourism, specifically at a destination scale, it becomes clear that there is ample knowledge on how to assess sustainability (e.g., Ko, 2005; Schianetz et al., 2007; Torres-Delgado & Saarinen, 2014), whereas examples for resilience assessments in a destination context are scarce (Posch et al., 2023). To better understand this discrepancy, we must take a closer look at both concepts and understand how they are defined. Resilience and sustainability are often used in similar contexts and the differences between are often only perceived as marginal making it difficult to distinguish between them (Hall, 2019; Lew et al., 2016). Both concepts are not only closely linked and share several characteristics, they even complement each other, yet ultimately are only related and not identical, let alone interchangeable (Hall, 2019; Saarinen & Gill, 2019). This becomes particularly evident, when zooming into the spatial and temporal scale of sustainability and resilience and when looking at the ontology by which research on both concepts is informed. In terms of spatial scale, resilience refers to the dynamic handling of shocks and stressors and therefore often operates on a local scale whereas sustainability broadens the view to global interdependencies. On a temporal scale, resilience thinking attends to shorter and dynamic cycles as the focus is on adaptation to change (Lew et al., 2016) whereas sustainability is more static and aims to maintain and conserve resources at or above existing levels (Lew et al., 2016; Xu et al., 2015). In line with this, resilience also does not conceptually emphasise intergenerational equity (Xu et al., 2015). Additionally, Lew et al. (2016) argue that the ontology by which sustainability and resilience research is informed is the substantial difference between both concepts. The assumptions about the nature of reality that underlies sustainability is based on stability and balance of the environmental, economic and social

components embedded within it. Resilience theory, in turn, is founded on the assumption of constant change in the face of unpredictable perturbations (Lew et al., 2016). These considerations have a direct impact on the tools that are used to assess sustainability and resilience.

Consequently, given its dynamic nature and the complexities associated with the occurrence of risk, using static indicators that measure a trend towards more or less resilience seems counterintuitive. The notion that operationalising resilience through a numerical value does not do justice to the concept is also repeatedly emphasised in the literature (Posch et al., 2023; Posch et al., 2020; Quinlan et al., 2016).

Likewise, recent research identifies ‘measurement’ as a barrier to making progress in resilience-centred sustainable development as this static approach returns the emphasis to assets and capitals (Reyers et al., 2022). Instead, the authors of the same study advocate for more process-based and locally contextualised interventions in the resilience arena (Reyers et al., 2022). In the same vein, Quinlan et al. (2016) suggest designing resilience assessment tools that acknowledge uncertainty, include participatory activities and account for learning and revisions. These considerations are also reflected in a broader call for changes in philosophical, theoretical and methodological orientation to gradually bring resilience research and sustainable development together (Reyers et al., 2022). Key terms in this endeavour are complexity- and process-orientation as well as the employment of systems approaches (Coetzee et al., 2018; Reyers et al., 2022). Resilience in tourism literature is still subject to a variety of interpretations not only depending on the disciplinary background of the respective researchers but also on the scale of analysis at which it is studied (Posch et al., 2023; Posch et al., 2020). Moreover, existing methods and tools often neglect the local context and risk perception of destination stakeholders (DKKV & Futouris, 2022). We conclude that assessments can be a valuable tool to bridge the gap between normative concepts in global frameworks and local realities. However, the differences between sustainability and resilience must be acknowledged and traditional assessment approaches for resilience must be rethought to effectively use resilience as a tool to support sustainable development.

2.2. Transdisciplinarity to ground research in relevance

In order to address the challenges associated with using resilience as a catalyst towards sustainable development that were outlined in the previous section, holistic approaches and the integration of different sets of knowledge from various scientific disciplines as well as collaboration with non-academic actors is required (Lang et al., 2012; Pärli et al., 2022). The joint production and integration of knowledge that engages various stakeholders from practice, industry and academia aims at producing applicable and socially robust solutions to address real-world problems and to support the transformation towards sustainable development (Belcher et al., 2019; Sarkki et al., 2013). One approach that has proved promising in this endeavour is the employment of transdisciplinary research - a concept which has gained considerable attention in the last two decades (Lawrence et al., 2022). TDR is regarded as a reflexive and integrative approach that crosses disciplinary boundaries and accounts for context specificity. It aims to solve societal problems by including a variety of academic and non-academic actors, integrating knowledge and combining different methodologies (Belcher et al., 2016; Lang et al., 2012). Transdisciplinary thus questions the “knowledge privilege of science” (Volgger & Pechlaner, 2015, p. 88) and opens the

field for heterarchical ways of knowledge production. TDR approaches have a strong emphasis on context and social engagement and are thus particularly suited for addressing inherently complex challenges such as those posed by resilience building for sustainable development (Lawrence et al., 2022). Unlike multidisciplinary research that covers more than one discipline but without integration or interdisciplinary research that aims at exchange and integration between disciplines, transdisciplinary research leaves the sphere of disciplines by requiring academic and non-academic actors to cooperate (Gibbs, 2017; Klein et al., 2001).

TDR focuses on societally relevant issues in a multi-dimensional, participatory and solution-oriented way and sets itself apart by decidedly involving academic actors with different disciplinary backgrounds as well as non-academic actors not just as subjects or spectators but as active participants (Woltersdorf et al., 2019). Research activities that are embedded within, and closely connected to their specific local contexts have a much greater chance of becoming a success story and reaching acceptance among the different stakeholders (Thaler et al., 2021). Depending on the background and scope of application, TDR is subject to varied definitions and there is no clear, widely accepted method for setting up a TDR approach (Lawrence et al., 2022). An idealised TDR approach is usually structured along three phases with similar characteristics (Jahn et al., 2012; Lang et al., 2012). In the first phase, researchers from different disciplines and non-academic actors jointly identify and frame a real-world problem. After identifying a shared problem that is of relevance for science and society, the collaborative research team focuses on developing and applying methods for co-creating solution-oriented and transferable interventions. In the third phase, the produced knowledge is documented, disseminated, and applied into academic and societal practice (Lawrence et al., 2022; Woltersdorf et al., 2019). Ideally this new knowledge contributes to both “the exploration of new options for solving societal problems” and “the development of interdisciplinary approaches, methods, and general insights related to the problem field” (Lang et al., 2012, p. 27).

A TDR approach recognises the need for producing and using different forms of knowledge. In this context, knowledge is often divided into three forms: systems, target, and transformation knowledge (Pohl & Hadorn Hirsch, 2008). System knowledge is essential to describe and understand the origin, structure and development of a given problem (Pärli et al., 2022). Target or orientation knowledge addresses the questions that relate to the preferred future or outcome of real-world problems based on societal goals, beliefs, and values of actors (Woltersdorf et al., 2019). Transformation knowledge is essential to identify or develop ways and means to transform existing conditions and to achieve common goals while taking established technologies, regulations, practices and power relations into account (Pohl & Hadorn Hirsch, 2007). As societal and environmental challenges become increasingly complex and interconnected, such as climate change and pandemics, TDR has shown its potential in terms of producing knowledge and developing solutions (Lawrence et al., 2022). Summarising, TDR emphasises the need to 1) contribute to societally relevant problems that trigger scientific research questions; 2) enable mutual learning by engaging academic and non-academic actors in the research process; and 3) develop knowledge that enables change and solves real-world problems (Belcher et al., 2016; Lang et al., 2012; Pohl & Hadorn Hirsch, 2007).

In tourism studies, TDR has received less attention and application compared to other disciplines. An explanation for this might be the overall debate about the disciplinary status of tourism studies altogether, which is still a contested topic (Volgger & Pechlaner, 2015). Picking up the notion that tourism studies is not a discipline, famously coined by calling tourism an “indiscipline” (Tribe, 1997, p. 639), tourism has rather developed as an interdisciplinary and multidisciplinary field that is heavily informed by economy, sociology, psychology, geography and environmental studies (Correia & Kozak, 2022). In tourism studies, knowledge production that is centred around theories and concepts is associated with multidisciplinary and interdisciplinary approaches, while knowledge production that is very close to practice is associated with transdisciplinary approaches (Tribe, 1997; Volgger & Pechlaner, 2015). Principles of transdisciplinary research surface in tourism literature in studies that address destination design (Volgger et al., 2021) which also revolves around addressing issues in increasingly complex destination environments in a participatory and actor-centred manner. Although scarce and not necessarily following similar characteristics, examples for the employment of transdisciplinary research approaches in a tourism context can be found regarding the analysis of risk, exposure and vulnerability in a cultural heritage context (Martins et al., 2021), sustainable rural tourism development (Arbogast et al., 2020) or climate change in winter sport destinations (Pröbstl et al., 2008).

3. Conceptual baseline and methodology for resilience assessment

While resilience has evolved as valuable concept to deal with risks and uncertainty, it has not been easy to translate conceptual ideas into locally applicable solutions. Answering the call for more process-based, locally contextualised and complexity-oriented approaches to resilience for sustainable development (cf. Section 2.1), we introduce a new assessment methodology rooted in TDR principles to address the complexities and dynamics associated with the occurrence of risk and support long-term resilience building for destinations. The TDR approach chosen for this assessment guides the analysis of risk-informed and resilient strategies and their subsequent application. In this section, we first present and integrate key aspects of risk and resilience in destinations. We then translate the conceptual baseline into five steps for building resilience and link them to the knowledge spheres of TDR. Lastly, we introduce the methods applied in the case study destinations.

Understanding risks is a necessary requirement for building resilience whereas resilience and risk-informed decision-making is a necessary prerequisite for sustainable development (Opitz-Stapleton et al., 2019; UNDP, 2021). The key conceptual ideas to understand destination resilience include the concept of tourism systems and the concept of risk and its components (cf. DKKV & Futouris, 2022). Based on a socio-ecological systems lens, destinations are conceptualised as networks of related public and private organisations that are connected through a web of social linkages (Baggio & Cooper, 2010; Jovicic, 2016; Nunkoo, 2017). Actors and stakeholders on different functional levels within this systemic structure jointly provide the tourism product. Building on the concept of risk as in the IPCC Sixth Assessment Report (IPCC, 2022; Reisinger et al., 2020), we define risk as the potential for negative outcomes, impacts or consequences where something of value is at stake and where the occurrence and degree of an outcome is uncertain. Sources of risk not only include natural hazards but can be of natural, anthropogenic/human-made or socio-natural origin. They include any type of sudden shock event (landslide, earthquake, terrorist attack) and slow-onset stressors (biodiversity loss, drought). Risk drivers are underlying physical, social, economic or

environmental factors that accelerate risk by influencing sources of risk, vulnerability and exposure (UNDRR & United Nations General Assembly, 2016). We distinguish between different dimensions of adverse impacts for a destination that include but are not restricted to impacts on human lives (i.e., safety, loss of lives, health), economy (i.e., loss of income, loss of employment opportunities, worker migration to other sectors), environment (i.e., loss of natural attractions, environmental degradation, loss of resources), destination image (i.e., reputation, competitiveness), built environment and infrastructure, and on community wellbeing (Becken et al., 2019; OECD, 2017; UNISDR, 2015). In that context, we draw on the definition of resilience as the overall ability of people in a destination (e.g. service providers, institutions, organisations) to deal with different risks while maintaining an acceptable level of functioning of the tourism system without compromising long-term prospects for sustainable development (cf. Section 2.1; DKKV & Futouris, 2022). Avoiding these adverse impacts requires the development of actions. Instead of relying on the traditional understanding of developing ‘recommended actions’ to address a certain risk, we prefer to broaden the term to ‘options for action’. For one, resilience building intentions can contradict aims of sustainable development and moreover the complexity of building resilience in multi-layered systems almost never requires imperative and exclusively valid recommended actions. Instead, the intention should be to display the variety of pathways and evaluate the most feasible, practical and realistic solution among them. This is why factors that enable or hinder actors’ ability (access to assets or capital) or willingness (individual values, norms, believes) to take action is also accounted for in the assessment methodology.

To break down the complexity and make the conceptual elements explained above more operational, we translated the conceptual baseline into a resilience assessment methodology with five steps that also reflect the different spheres of knowledge in TDR. System knowledge provides an understanding of the socio-ecological system (e.g., the tourism destination), a problem’s origin and underlying dynamics (e.g., sources of risk, risk drivers); target knowledge describes the preferred future and desired goals, underlying needs, and interests of tourism actors in a destination (e.g., actor preferences and priorities); transformation or action knowledge investigates how the identified problems can be addressed (e.g., underlying barriers and strategies) and how to make the transition from knowledge into action (Hirsch Hadorn & Jäger, 2008). In the resilience assessment methodology we propose, the three forms of knowledge are linked to the questions that address each of the five steps (table 1): (1) describing the tourism system (identifying actors and assets, examining destination characteristics), (2) understanding sources of risk (hazards or threats of natural, anthropogenic, or socio-natural origin) and underlying risk drivers (factors influencing vulnerability and exposure), (3) feasible and relevant options for action to address risks and build resilience, (4) barriers and enablers to implement identified actions, (5) development of a strategy, identification of responsibilities (cf. DKKV & Futouris, 2022).

Table 1: The five steps, related conceptual elements, key questions and knowledge types involved, and applied methods

Methodological step	Conceptual elements covered in the related step	Key questions and knowledge types involved (S, T, A) ¹	Methods ²
Step 1	Tourism system	<ul style="list-style-type: none"> • What is the geographical scale of the destination of interest? (S) • Who are the main actors involved in the creation and delivery of the tourism product offered in the destination? (S) • What elements compromise and describe the destination? (S) 	Literature review (DR, N, SL) Survey (N) Focus groups (SL)
Step 2	Sources of risk	<ul style="list-style-type: none"> • Who or what is at risk (exposure) from what (sources of risk) and why (vulnerabilities)? (S) • How do the identified risks affect tourism? (S) 	Literature review (DR, N, SL) Stakeholder workshops (DR, N, SL) Focus groups (SL)
	Risk drivers	<ul style="list-style-type: none"> • What are underlying risk drivers that increase risk? (S) 	
Step 3	Options for action	<ul style="list-style-type: none"> • What options for action to respond to these risks are available and desired by tourism actors? (T) 	Stakeholder workshop (DR, N, SL)
Step 4	Barriers and enablers	<ul style="list-style-type: none"> • What are barriers and enablers to taking resilient action? (A) • Which options for action are feasible? (A) 	Stakeholder workshop (DR) Survey (N, SL)
	Priorities	<ul style="list-style-type: none"> • How do local actor prioritise options for action to respond to risks? (T) 	
Step 5	Strategy	<ul style="list-style-type: none"> • How can identified barriers be overcome? (A) • How can the identified actions be translated into a strategy? (A) 	Stakeholder workshop (DR, N, SL)
	Responsibilities	<ul style="list-style-type: none"> • Who is responsible for the implementation of selected actions for building resilience? (A) 	

¹ S = system knowledge, T = target knowledge, A = transformative or action knowledge [based on Messerli and Messerli (2008)].

² DR = Dominican Republic; N = Namibia; SL = Sri Lanka.

A central principle of TDR is bringing academic and non-academic actors to one table to find solutions for real-world problems. The methodological 5-step approach picks up these TDR principles throughout and suggest methods that allow for the co-creation of knowledge. In each case study the same research design based on the conceptual framework was employed with slight variations in choice of method for each step (see right column table 1). The assessment methodology presented herein has been implemented in three destinations, namely the mountain town Ella in Sri Lanka, the Erongo Region in Namibia and the Samaná peninsula in the Dominican Republic (figure 1).

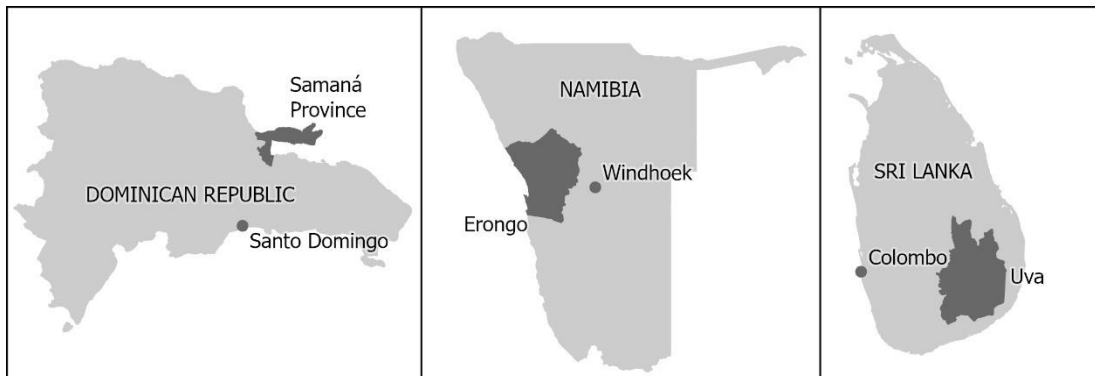


Figure 1: Overview of case study destinations (cartography: Veronika Gerbl)

The three destinations represent case studies at different scales including regional, provincial and local level. In each destination a local project team was responsible for the implementation of the resilience assessment. While the exact composition of the project teams was slightly different in each destination, they all consisted of academic and non-academic actors including natural and social scientists (e.g., economics, tourism studies, environmental studies, geography etc.), local tourism authorities or tourism board members and NGOs. As described in section 2.2 transdisciplinary research approaches require the employment of participatory methods that allow for the involvement of relevant stakeholders. Table 2 provides an overview of methods applied in the case study destinations. Participants of the stakeholder workshops included institutional actors (government, ministries), destination management organisations, tourism businesses (e.g., accommodation providers, tour operators, transport services), local NGOs and representatives from academia. The stakeholder workshops as well as all other formats such as focus groups and surveys were documented via reports, transcripts or statistical data and fed into the analysis.

Table 2: Overview of methods from case studies

	Focus group	Stakeholder workshop 1	Stakeholder workshop 2	Survey
Namibia	-	n=50	n=25	n=20; n=25
Dominican Republic	-	n=28	n=34	-
Sri Lanka	n=9; n=4	n=33	n=32	n=50

4. Results from the case studies based on TDR

As evident from table 1, the methodological steps and conceptual elements that form part of the resilience assessment can be linked to the knowledge types that are used in TDR research. In the following section we map out the results from the resilience assessment in each destination and illustrate how the results can be linked to the different types of knowledge. After looking at each destination context and the identified risks, we report how the challenges in each destination were addressed and focus on the process of how they were translated into a resilience building strategy.

In terms of system knowledge, firstly, the tourism system of each destination including different geographical scales, actors and assets (e.g. natural and built environment, attractions, visitor markets), and their defining characteristics (e.g., socio-economic, environmental, institutional aspects) were analysed. Secondly, an understanding of risks for destinations was obtained based on the methods described in section 3. The resultant destination context and risk profiles are now shortly summarised for each case study destination:

- **Samaná province, Dominican Republic** – The peninsula Samaná is located in the Cibao Nordeste region and is known for its biodiversity and scenic landscapes. The destination decidedly differs from other tourism offers in the Dominican Republic such as Punta Cana by offering nature-based and adventure tourism with activities centring around national parks, snorkelling, whale observation and classic sun and beach tourism. The destination is particularly popular among individual travellers. Key risks in Samaná province include hurricanes and tropical storms, coastal erosion, vector-borne diseases, biodiversity loss, infrastructure safety and overdependence on tourism.
- **Ella, Sri Lanka** – Ella is a mountain destination located in the central mountain range of Sri Lanka. The destination assets include a famous railway track, mountain peaks, forests, tea plantations and a scenic village. The cooler climate and accessibility by train make it particularly popular for roundtrips by individual travellers. Main risks for Ella include landslides, soil erosion, extreme precipitation events, forest fires, water contamination, political instability and working capital issues.
- **Erongo Region, Namibia** – In Namibia, the Erongo Region surrounding the city of Swakopmund was chosen as a unit of analysis. It is one of the key destinations in the country and contributes significantly to foreign currency generation and employment. The region is named after the famous Erongo mountain range and is known for its historical architecture and its unique landscape including natural characteristics such as mountains, dunes and beaches on the Atlantic Ocean coastline. The main risks in the Erongo Region include floods, droughts, coastal erosion, biodiversity loss, mismanagement of natural resources, road safety and crime.

Underlying factors that influence exposure, hazards or vulnerability were identified for each risk in the destinations. Commonly described risk drivers across all destinations included lack of regulations and building codes, poor design and construction of buildings, lack of monitoring and early warning systems, missing implementation of management frameworks, poor environmental management, overconsumption of natural resources, climate change, poverty, inequality, migration, unregulated land use planning and dependence on tourism as a single livelihood.

In terms of target knowledge, the academic and non-academic stakeholders in each destination identified desirable options for action to address different risks (i.e., preferences and priorities).

Options for action were categorised in general resilience building strategies (e.g., reduction of overall dependencies/diversification, strengthening of social networks) and destination-specific/risk-specific resilience building actions (e.g., mangrove reforestation for coastal protection, signposting for evacuation routes). By employing surveys in which destination stakeholders could indicate their preferences and priorities for options for action and indicate barriers for achieving them, feasible, realistic and agreed-upon action could be identified for each destination.

This last step is closely linked to the transformative knowledge that looks at how existing conditions can be transformed to achieve common goals. To develop a realistic way forward, barriers to pursuing identified options for action must be identified and recognised as such. Commonly identified barriers from the destination samples were lack of adequate skills, awareness and knowledge of risk management and sustainable tourism planning, access to financial resources, access to social networks, lack of proactive action from authorities, time constraints for process of approval/permit, lack of sense of usefulness of proposed actions and lack of willingness due to personal belief. In a final workshop the local project teams discussed the identified barriers with stakeholders and developed ideas and solutions to overcome them. Moreover, the identified options for action were translated into destination strategies and responsibilities for implementation were assigned. The destination stakeholders from Samaná, Dominican Republic formed a trans-sectoral resilience roundtable. Relevant actors of the three governance levels in the province (central, provincial and municipal) as well as NGOs, the community and the private sector are represented in the panel. They oversee the further implementation of the strategy, take relevant decisions and monitor the future progress. Namibia and Sri Lanka adopted similar approaches and reported high levels of motivation, engagement and ownership by stakeholders due to their involvement in the entire assessment process.

5. Potentials and limitations of TDR for making resilient and sustainable development locally meaningful

This study highlights that employing a TDR approach for resilience assessment at destination scale proves expedient and that it offers a variety of potentials to address the characteristics of the resilience concept while allowing for the development of readily-applicable results and strategies on the ground. In this section we discuss who should be involved in a resilience assessment, how it should be approached from a methods standpoint, and which merits the approach offers for the content and the process of the assessment itself.

Prayag (2018) states that the “resilience of a destination is often a matter of the resilience of its constituents” (p. 134), which is a notion further assured by Amore et al. (2018) stating that “the resilience of individuals, organisations, and other stakeholders, as well as resilience of subsystems, will be key determinants of the resilience of the system as a whole, together with the structure of the system” (p. 240). In line with this actor-oriented framing of resilience (Posch et al., 2020), we want to highlight the importance of international, but locally rooted, cross-sectoral partnerships in research. Following this scheme, a diverse and interdisciplinary research team was assembled in each case study destination. The fact that the members of each team were local residents and not external researchers or consultants also proved useful for engaging destination/local stakeholders for the participatory formats of the assessment as the social networks of the team members in the respective destination facilitated the invitation of very heterogeneous stakeholders. A decisive

advantage of our approach is the strengthening of the self-reliance of the destination without influence from external agents that allows for the development of strategies *in* the destination *for* the destination. External agents can be restricted in developing and implementing effective policies due to their limited knowledge of the local tourism system, contact with community members or expertise in coordinating stakeholders (Moscardo, 2011). Long-term capacity building, awareness creation and ownership of proposed solution is more likely to occur if assessments are conducted by local project teams and if local community members are active players in the development processes. Research that is informed by local needs and dedicated to better understanding the local context supports the development of sustainable and resilient solutions. The broad involvement of destination stakeholders and non-governmental organisations in all three destinations allowed for the development of strategies that were commonly agreed upon and deemed feasible by the actors. Linking research to practice calls for strong partnerships between academic and non-academic actors (Gill et al., 2021). However, establishing equal partnerships takes time and requires sufficient resources and commitment from all parties involved. This is often not recognised by existing funding schemes, tight project schedules and short project lifecycles. Moreover, roles and responsibilities need to be clarified – a time-consuming process when various actors with different backgrounds are involved.

In terms of methods, merits for the employment of participatory techniques have been extensively elucidated in the sustainable tourism and resilience literature (Eckert, 2022; Islam et al., 2021; Quinlan et al., 2016; Sellberg et al., 2021; Torres-Delgado & Saarinen, 2014). This is why the methods that were employed in our resilience assessment methodology very much focused on enabling exchange, sharing ideas and collecting information, opinions and attitudes from relevant stakeholders. Particularly the stakeholder workshops that were carried out as part of the assessments employed a variety of creative and innovative techniques and tools to facilitate exchange among participants and enable the organic emergence of knowledge and new ideas. The intention was to capture input and ideas from those planning and carrying out tourism activities as well as those ultimately affected by tourism development. To further foster this, all stakeholder workshops were held in local language and conducted by local facilitators. This proved to be essential as understanding and communicating the meaning behind terms and the technical language particularly associated with the concepts surrounding the term 'risk' also vary greatly across different languages (Cannon & Schipper, 2014). Different cultural backgrounds and belief systems influence our understanding of risk, resilience and sustainability. Hence, reflection on one's own positionality is important, as well as understanding what it means to be involved in North-South research cooperations (Gill et al., 2021). In terms of content of the resilience assessment itself, the composition of the stakeholder groups and the methods employed resulted in two decisive benefits for the overall quality and usefulness of the assessment. One of the greatest difficulties for effective resilience and sustainability assessments is still limited data availability (O'Mahony et al., 2009; Torres-Delgado & Saarinen, 2014). However, this lack of formally collected and monitored data on sustainability, risk and disaster does not imply a lacking sense of understanding risk and its management. The focus groups and the stakeholder workshops conducted in the case study destination produced vast amounts of knowledge and information on risk drivers, risk impact chains and respective effects on the communities, tourism businesses and the handling of those risks (cf. DKKV & Futouris, 2022). These observations are in line with existing research that suggests that specific local knowledge and the incorporation of stakeholders from the third sector has long not been formally recognised in tourism planning and development but is now

increasingly acknowledged as an added value, specifically in a disaster context (Brito et al., 2011; Chan et al., 2021; Orchiston & Higham, 2016).

In terms of process, structuring the assessment along the three knowledge types identified in TDR proved to be very useful in guiding not only the process but also the actors. The steps related to system knowledge established a solid foundation of destination and risk knowledge for the destination and allowed actors to better map the different stakeholders in the system and their functions as well as gaining a structured understanding of risks for the destination. Building a preferred future of out the available options for action by indicating preferences and priorities allowed for the development of realistic and feasible solutions that are supported by destination stakeholders. Lastly, inquiries related to transformative knowledge supported the transition from knowledge into action through the development of long-term strategies. The merit of the transdisciplinary approach employed in this study can therefore be clearly traced to its contribution to and integration of different forms of knowledge. We conclude that effective resilience building strategies must refrain from one-size-fits-all approaches, need to integrate the specific destination context, its risk profile and local priorities. Building on the principles of genuine participation and local expertise, this approach ensures solutions tailored to local context.

Lastly, in line with the importance of context-specificity, another added value in the proof of this approach was its parallel implementation in three destinations across three continents. As tourism research is mostly place-based and cross-country analyses are scarce (Correia & Kozak, 2022), this study offers high potential for comparison and generalisation of results due to the application of the methodology across different contexts. The assessment methodology allows for a high degree of flexibility in terms of scale of the unit under investigation, by covering a broad spectrum of types of destinations and by allowing for the analysis of very diverse risk profiles.

6. Conclusion

This study serves as an important baseline for further studies in the field of resilience building in destinations by highlighting innovative practices for using resilience as a catalyst towards sustainable development. Starting with the reflection that normative and superordinate global frameworks for sustainability and resilience act as an important guideline but need to be made operational for smaller scale realities, we introduce ‘assessments’ as a tool to bridge this divide. However, when looking at the conceptual links between sustainability, resilience and risk, it becomes evident that there are fundamental differences between the concepts that must be translated to the tools with which sustainability and resilience are assessed. Unlike the stable and balanced notion of sustainability, resilience must account for constant change and unpredictability which calls for innovative and dynamic approaches. Challenging previous methodological orientations (cf. Reyers et al., 2022) for resilience research, we analyse how TDR can be applied in the destination and resilience context. TDR is described as a reflexive approach that considers context and participation to address complex challenges and real-world problems. Advancing the topic of TDR in destinations, which has received very little attention in tourism research so far, we translate the elements of our conceptual baseline into five steps for building resilience that also reflect the three TDR knowledge types. We add to the theoretical understanding by innovatively merging knowledge from disaster risk reduction and sustainable tourism to map out a new and creative assessment methodology that is process-oriented, participatory, adaptive, feasible and

allows for the integration local knowledge. On a practical note, we introduce three case study destinations and illustrates the process, methods and results of the resilience assessment in each destination. Lastly, the study critically reflects on the potentials and limitations of TDR in a resilience building context. The study shows that the resilience assessment methodology is very flexible and that it is applicable to a broad spectrum of spatial scales, destination types and contexts as well as risk profiles. The results obtained pose several implications for destination managers and policy makers in that they highlight the critical role of risk-specificity and destination-specificity for resilience building in destinations and strengthens the idea that dynamic, process-oriented and participatory approaches are key. In the future, greater efforts are needed to ensure that global framework still act as guiding principles but are broken down to local realities to translate intentions into action. The assessment methodology introduced in this study could be applied in further destination contexts to validate its potentials and limitations. Moreover, studies on the effectiveness of the proposed methodology and the long-term effects in the destinations would be an interesting topic for further research.

Relevance for future destination development:

In the face of the increasing occurrence of risk induced by global developments such as climate change, addressing risk will increasingly become a key skill for destination managers. In this chapter, we advocate for bridging the divide between normative concepts translated into global frameworks and local realities. By introduction an assessment methodology that is based on principles of transdisciplinary research (TDR), we make the resilience concept applicable to local contexts and foster destination-specific approaches. We believe that employing the proposed framework and basing the assessment on principles from TDR allows for the development of actionable measures to build resilience against unknown and unforeseen risks as well as specific risks identified in the assessment.

Funding and acknowledgements

As part of a development cooperation project funded by the German Federal Ministry for Economic Cooperation and Development (BMZ) through the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) under grant no. 20.1001.5-012.00, a consortium of researchers and practitioners explored risks for tourism destinations in Namibia, Sri Lanka and the Dominican Republic and transformative potential of tourism actors in addressing risks and increasing resilience for sustainable development. Eva Posch gratefully acknowledges funding from the Austrian Science Fund (FWF) (grant no. T-1311).

7. References

- Amore, A., Prayag, G., & Hall, C. M. (2018). Conceptualizing Destination Resilience From a Multilevel Perspective. *TOURISM REVIEW INTERNATIONAL*, 22(3), 235–250. <https://doi.org/10.3727/154427218X15369305779010>
- Arbogast, D., Butler, P., Faulkes, E., Eades, D., Deng, J., Maumbe, K., & Smaldone, D. (2020). Using social design to visualize outcomes of sustainable tourism planning: a multiphase, transdisciplinary approach. *International Journal of Contemporary Hospitality Management*, 32(4), 1413–1448. <https://doi.org/10.1108/IJCHM-02-2019-0140>
- Atwii, F., Bergtora Sandvik, K., Kirch, L., Paragi, B., Radtke, K., Schneider, S., & Weller, D. (2022). *WorldRiskReport 2022*. Bündnis Entwicklung Hilft, Ruhr University Bochum - Institute for International Law of Peace and Armed Conflict (IFHV)
- Baggio, R., & Cooper, C. (2010). Knowledge transfer in a tourism destination: the effects of a network structure. *The Service Industries Journal*, 30(10), 1757–1771. <https://doi.org/10.1080/02642060903580649>
- Bec, A., McLennan, C., & Moyle, B. D. (2016). Community resilience to long-term tourism decline and rejuvenation: a literature review and conceptual model. *Current Issues in Tourism*, 19(5), 431–457. <https://doi.org/10.1080/13683500.2015.1083538>
- Becken, S. (2013). Developing a framework for assessing resilience of tourism sub-systems to climatic factors. *Annals of Tourism Research*, 43, 506–528. <https://doi.org/10.1016/j.annals.2013.06.002>
- Becken, S., Hess, J. S., Scott, D., & Wisansing, J. (2019). *Climate Change Risk Assessment for Thailand's Tourism Sector - Research Report*. https://www.griffith.edu.au/__data/assets/pdf_file/0033/1173579/Climate-Change-Risk-Assessment-for-Thailands-Tourism-Sector_.pdf
- Belcher, B. M., Claus, R., Davel, R., & Ramirez, L. F. (2019). Linking transdisciplinary research characteristics and quality to effectiveness: A comparative analysis of five research-for-development projects. *Environmental Science & Policy*, 101, 192–203. <https://doi.org/10.1016/j.envsci.2019.08.013>
- Belcher, B. M., Rasmussen, K. E., Kemshaw, M. R., & Zornes, D. A. (2016). Defining and assessing research quality in a transdisciplinary context. *Research Evaluation*, 25(1), 1–17. <https://doi.org/10.1093/reseval/rvv025>
- Biermann, F., Kanie, N., & Kim, R. E. (2017). Global governance by goal-setting: the novel approach of the UN Sustainable Development Goals. *Current Opinion in Environmental Sustainability*, 26-27, 26–31. <https://doi.org/10.1016/j.cosust.2017.01.010>
- Biggs, D., Hall, C. M., & Stoeckl, N. (2012). The resilience of formal and informal tourism enterprises to disasters: reef tourism in Phuket, Thailand. *Journal of Sustainable Tourism*, 20(5), 645–665. <https://doi.org/10.1080/09669582.2011.630080>
- Bond, A., Morrison-Saunders, A., & Pope, J. (2012). Sustainability assessment: the state of the art. *Impact Assessment and Project Appraisal*, 30(1), 53–62. <https://doi.org/10.1080/14615517.2012.661974>
- Brito, P. M. de, Ferreira, A. M., & Costa, C. (2011). Tourism and Third Sector Organisations—Strangers or Partners? *Tourism Planning & Development*, 8(1), 87–100. <https://doi.org/10.1080/21568316.2011.554741>

- Brown, N. A., Orchiston, C., Rovins, J. E., Feldmann-Jensen, S., & Johnston, D. (2018). An integrative framework for investigating disaster resilience within the hotel sector. *Journal of Hospitality and Tourism Management*, 36, 67–75. <https://doi.org/10.1016/j.jhtm.2018.07.004>
- Calgaro, E., Dominey-Howes, D., & Lloyd, K. (2014). Application of the Destination Sustainability Framework to explore the drivers of vulnerability and resilience in Thailand following the 2004 Indian Ocean Tsunami. *Journal of Sustainable Tourism*, 22(3), 361–383. <https://doi.org/10.1080/09669582.2013.826231>
- Cannon, T., & Schipper, L. (2014). *World disasters report 2014: Focus on culture and risk*. Geneva. International Federation of Red Cross and Red Crescent Societies. <https://www.ifrc.org/world-disasters-report-2014>
- Chan, C.-S., Nozu, K., & Zhou, Q. (2021). Building destination resilience in the tourism disaster management process from the past experiences: The case of the 2018 Hokkaido Eastern Iburi earthquake in Japan. *Tourism Recreation Research*, 39(15), 1–17. <https://doi.org/10.1080/02508281.2021.1881707>
- Cheer, J. M., Milano, C., & Novelli, M. (2019). Tourism and community resilience in the Anthropocene: accentuating temporal overtourism. *Journal of Sustainable Tourism*, 27(4), 554–572. <https://doi.org/10.1080/09669582.2019.1578363>
- Chen, F., Xu, H., & Lew, A. A. (2020). Livelihood resilience in tourism communities: the role of human agency. *Journal of Sustainable Tourism*, 28(4), 606–624. <https://doi.org/10.1080/09669582.2019.1694029>
- Coetzee, C., van Niekerk, D., & Raju, E. (2018). Reconsidering disaster resilience: a nonlinear systems paradigm in agricultural communities in Southern Africa. *Natural Hazards*, 90(2), 777–801. <https://doi.org/10.1007/s11069-017-3071-4>
- Correia, A., & Kozak, M. (2022). Past, present and future: trends in tourism research. *Current Issues in Tourism*, 25(6), 995–1010. <https://doi.org/10.1080/13683500.2021.1918069>
- Dahles, H., & Susilowati, T. P. (2015). Business resilience in times of growth and crisis. *Annals of Tourism Research*, 51, 34–50. <https://doi.org/10.1016/j.annals.2015.01.002>
- DKKV & Futouris. (2022). *Resilience Analysis Guideline for Tourism Destinations -Introducing key concepts and methodological steps to analyse destination resilience*. https://www.dkkv.org/fileadmin/user_upload/DKKV_Futouris_Resilience_Guideline.pdf
- Eckert, E. (2022). Reconciling Scientific, Political and Participatory Perspectives on Sustainable Tourism Indicator Development for Destination Sustainability Assessment. *Tourism Planning & Development*, 1–21. <https://doi.org/10.1080/21568316.2022.2134198>
- Gibbs, P. (2017). *Transdisciplinary Higher Education*. Springer International Publishing. <https://doi.org/10.1007/978-3-319-56185-1>
- GIDRM (Ed.). (n.y.). *What is risk-informed development?* Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. <https://www.gidrm.net/en/gidrm-phase-3/what-is-risk-informed-development>
- Gill, J. C., Taylor, F. E., Duncan, M. J., Mohadjer, S., Budimir, M., Mdala, H., & Bukachi, V. (2021). Invited perspectives: Building sustainable and resilient communities – recommended actions for natural hazard scientists. *Natural Hazards and Earth System Science*, 21(1), 187–202. <https://doi.org/10.5194/nhess-21-187-2021>
- Gössling, S., & Higham, J. (2021). The Low-Carbon Imperative: Destination Management under Urgent Climate Change. *Journal of Travel Research*, 6(60), 1167–1179. <https://doi.org/10.1177/00472875209336>

- Hall, M. C. (2019). Resilience theory and tourism. In J. Saarinen & A. Gill (Eds.), *Contemporary geographies of leisure, tourism and mobility. Resilient destinations and tourism: Governance strategies in the transition towards sustainability in tourism* (pp. 34–47). ROUTLEDGE.
- Hirsch Hadorn, G., & Jäger, J. (Eds.). (2008). *Handbook of transdisciplinary research*. Springer.
- IPCC. (2022). *Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press. https://report.ipcc.ch/ar6wg3/pdf/IPCC_AR6_WGIII_FinalDraft_FullReport.pdf
- Islam, M. S., Lovelock, B., & Coetzee, W. J. L. (2021). Liberating sustainability indicators: Developing and implementing a community-operated tourism sustainability indicator system in Boga Lake, Bangladesh. *Journal of Sustainable Tourism*, 1(2), 1–21. <https://doi.org/10.1080/09669582.2021.1928147>
- Jahn, T., Bergmann, M., & Keil, F. (2012). Transdisciplinarity: Between mainstreaming and marginalization. *Ecological Economics*, 79, 1–10. <https://doi.org/10.1016/j.ecolecon.2012.04.017>
- Jovicic, D. Z. (2016). Key issues in the conceptualization of tourism destinations. *Tourism Geographies*, 18(4), 445–457. <https://doi.org/10.1080/14616688.2016.1183144>
- Klein, J. T., Häberli, R., Scholz, R. W., Grossenbacher-Mansuy, W., Bill, A., & Welti, M. (2001). *Transdisciplinarity: Joint Problem Solving among Science, Technology, and Society*. Birkhäuser Basel. <https://doi.org/10.1007/978-3-0348-8419-8>
- Ko, T. G. (2005). Development of a tourism sustainability assessment procedure: a conceptual approach. *Tourism Management*, 26(3), 431–445. <https://doi.org/10.1016/j.tourman.2003.12.003>
- Lang, D. J., Wiek, A., Bergmann, M., Stauffacher, M., Martens, P., Moll, P., Swilling, M., & Thomas, C. J. (2012). Transdisciplinary research in sustainability science: Practice, principles, and challenges. *Sustainability Science*, 7(S1), 25–43. <https://doi.org/10.1007/s11625-011-0149-x>
- Lawrence, M. G., Williams, S., Nanz, P., & Renn, O. (2022). Characteristics, potentials, and challenges of transdisciplinary research. *One Earth*, 5(1), 44–61. <https://doi.org/10.1016/j.oneear.2021.12.010>
- Lew, A. A., Ng, P. T., Ni, C., & Wu, T. (2016). Community sustainability and resilience: similarities, differences and indicators. *Tourism Geographies*, 18(1), 18–27. <https://doi.org/10.1080/14616688.2015.1122664>
- Martins, A. N., Pereira, A. A., Forbes, C., Lima, J. L. M. P. de, & Matos, D. (2021). Risk to cultural heritage in Baixa Pombalina (Lisbon Downtown) - a transdisciplinary approach to exposure and drivers of vulnerability. *International Journal of Architectural Heritage*, 15(7), 1058–1080. <https://doi.org/10.1080/15583058.2020.1745322>
- Messerli, B., & Messerli, P. (2008). From Local Projects in the Alps to Global Change Programmes in the Mountains of the World: Milestones in Transdisciplinary Research: Milestones in Transdisciplinary Research. In G. Hirsch Hadorn & J. Jäger (Eds.), *Handbook of transdisciplinary research* (pp. 43–62). Springer.
- Moscardo, G. (2011). Exploring social representations of tourism planning: issues for governance. *Journal of Sustainable Tourism*, 19(4-5), 423–436. <https://doi.org/10.1080/09669582.2011.558625>

- Ntounis, N., Parker, C., Skinner, H., Steadman, C., & Warnaby, G. (2022). Tourism and Hospitality industry resilience during the Covid-19 pandemic: Evidence from England. *Current Issues in Tourism*, 25(1), 46–59. <https://doi.org/10.1080/13683500.2021.1883556>
- Nunkoo, R. (2017). Governance and sustainable tourism: What is the role of trust, power and social capital? *Journal of Destination Marketing & Management*, 6(4), 277–285. <https://doi.org/10.1016/j.jdmm.2017.10.003>
- OECD. (2017). *DAC Working Party on Development Finance Statistics: Proposal to Establish a Policy Marker for Disaster Risk Reduction (DRR) in the OECD DAC Creditor Reporting System (CRS)*.
- O'Mahony, C., Ferreira, M., Fernández-Palacios, Y., Cummins, V., & Haroun, R. (2009). Data availability and accessibility for sustainable tourism: An assessment involving different European coastal tourism destinations. *Journal of Coastal Research*, 56, 1135–1139. www.jstor.org/stable/25737964
- Opitz-Stapleton, S., Nadin, R., Kellett, J., Calderone, M., Quevedo, A., Peters, K., & Mayhew, L. (2019). *Risk-informed development: From crisis to resilience*. Research report. <https://odi.org/en/publications/risk-informed-development-from-crisis-to-resilience/> <https://doi.org/10.13140/RG.2.2.24990.28480>
- Orchiston, C., & Higham, J. (2016). Knowledge management and tourism recovery (de)marketing: the Christchurch earthquakes 2010–2011. *Current Issues in Tourism*, 19(1), 64–84. <https://doi.org/10.1080/13683500.2014.990424>
- Pärli, R., Fischer, M., & Lieberherr, E. (2022). What are the effects of transdisciplinary research projects in the global North and South? A comparative analysis. *Current Research in Environmental Sustainability*, 4, 100180. <https://doi.org/10.1016/j.crsust.2022.100180>
- Pohl, C., & Hadorn Hirsch, G. (2007). *Principles for designing transdisciplinary research*. oekom Munich.
- Pohl, C., & Hadorn Hirsch, G. (2008). Gestaltung transdisziplinärer Forschung. *Sozialwissenschaften Und Berufspraxis (SuB)*, 13(1), 5–22. <https://doi.org/10.1515/9783110407365-005>
- Pope, J. (2006). Editorial: What's so special about sustainability assessment? *Journal of Environmental Assessment Policy and Management*, 08(03), v–x. <https://doi.org/10.1142/S1464333206002505>
- Posch, E., Eckert, E., & Thiebes, B. (2023). Resilience is not a number – a critical remark on destination resilience. *Manuscript Submitted for Publication*.
- Posch, E., Höferl, K. M., Steiger, R., & Bell, R. (2020). Another take on reframing resilience as agency: The Agency Towards Resilience (ATR) model. In P. P. Santos, K. Chmutina, J. von Meding, & E. Raju (Eds.), *Understanding Disaster Risk: A Multidimensional Approach* (pp. 239–255). Elsevier. <https://doi.org/10.1016/B978-0-12-819047-0.00013-5>
- Prayag, G. (2018). Symbiotic relationship or not? Understanding resilience and crisis management in tourism. *Tourism Management Perspectives*, 25, 133–135. <https://doi.org/10.1016/j.tmp.2017.11.012>
- Pröbstl, U., Prutsch, A., Formayer, H., Landauer, M., Grabler, K., Kulnig, A., Jesch, M., Dallhammer, E., & Krajasits, C. (2008). Climate change in winter sport destinations – transdisciplinary research for implementing sustainable tourism. In C. A. Brebbia & F. D. Pineda (Eds.), *WIT Transactions on Ecology and the Environment, Sustainable Tourism III* (pp. 165–173). WIT PressSouthampton, UK. <https://doi.org/10.2495/ST080171>
- Quinlan, A. E., Berbés-Blázquez, M., Haider, L. J., & Peterson, G. D. (2016). Measuring and assessing resilience: broadening understanding through multiple disciplinary perspectives. *Journal of Applied Ecology*, 53(3), 677–687. <https://doi.org/10.1111/1365-2664.12550>

- Reisinger, A., Howden, M. S., Vera, C., Garschagen, M., Hurlbert, M., Kreibiehl, S., Mach, K. J., Mintenbeck, K., O'Neill, B., Pathak, M., Pedace, R., Pörtner, H.-O., Poloczanska, E., Corradi, M. R., Sillmann, J., van Aalst, M., Viner, D., Jones, R., Ruane, A. C., & Ranasinghe, R. (2020). *The Concept of Risk in the IPCC Sixth Assessment Report: a Summary of Cross-Working Group Discussions*. Switzerland. Intergovernmental Panel on Climate Change.
- Renn, O., Laubichler, M., Lucas, K., Kröger, W., Schanze, J., Scholz, R. W., & Schweizer, P.-J. (2020). Systemic Risks from Different Perspectives. *Risk Analysis : An Official Publication of the Society for Risk Analysis*. Advance online publication. <https://doi.org/10.1111/risa.13657>
- Reyers, B., Moore, M.-L., Haider, L. J., & Schlüter, M. (2022). The contributions of resilience to reshaping sustainable development. *Nature Sustainability*, 5(8), 657–664. <https://doi.org/10.1038/s41893-022-00889-6>
- Saarinen, J., & Gill, A. (2019). Tourism, resilience, and governance strategies in the transition towards sustainability. In J. Saarinen & A. Gill (Eds.), *Contemporary geographies of leisure, tourism and mobility. Resilient destinations and tourism: Governance strategies in the transition towards sustainability in tourism* (pp. 15–33). ROUTLEDGE.
- Sarkki, S., Heikkinen, H. I., & Karjalainen, T. P. (2013). Sensitivity in transdisciplinary projects: A case of reindeer management in Finland. *Land Use Policy*, 34, 183–192. <https://doi.org/10.1016/j.landusepol.2013.03.004>
- Schianetz, K., Kavanagh, L., & Lockington, D. (2007). Concepts and Tools for Comprehensive Sustainability Assessments for Tourism Destinations: A Comparative Review. *Journal of Sustainable Tourism*, 15(4), 369–389. <https://doi.org/10.2167/jost659.0>
- Schweizer, P.-J., Goble, R., & Renn, O. (2022). Social Perception of Systemic Risks. *Risk Analysis : An Official Publication of the Society for Risk Analysis*, 42(7), 1455–1471. <https://doi.org/10.1111/risa.13831>
- Scott, D., Hall, C. M., & Gössling, S. (2019). Global tourism vulnerability to climate change. *Annals of Tourism Research*, 77(1), 49–61. <https://doi.org/10.1016/j.annals.2019.05.007>
- Sellberg, M. M., Quinlan, A., Preiser, R., Malmberg, K., & Peterson, G. D. (2021). Engaging with complexity in resilience practice. *Ecology and Society*, 26(3). <https://doi.org/10.5751/ES-12311-260308>
- Stafford-Smith, M., Griggs, D., Gaffney, O., Ullah, F., Reyers, B., Kanie, N., Stigson, B., Shrivastava, P., Leach, M., & O'Connell, D. (2017). Integration: The key to implementing the Sustainable Development Goals. *Sustainability Science*, 12(6), 911–919. <https://doi.org/10.1007/s11625-016-0383-3>
- Thaler, T., Clar, C., Junger, L., & Nordbeck, R. (2021). Opportunities and challenges for transdisciplinary research in flood risk management: some critical reflections and lessons learnt for research on sustainability. *Eco.Mont (Journal on Protected Mountain Areas Research)*, 13(2), 42–47. <https://doi.org/10.1553/eco.mont-13-2s42>
- Torres-Delgado, A., & Saarinen, J. (2014). Using indicators to assess sustainable tourism development: a review. *Tourism Geographies*, 16(1), 31–47. <https://doi.org/10.1080/14616688.2013.867530>
- Tribe, J. (1997). The indiscipline of tourism. *Annals of Tourism Research*, 24(3), 638–657. [https://doi.org/10.1016/S0160-7383\(97\)00020-0](https://doi.org/10.1016/S0160-7383(97)00020-0)
- UN (Ed.). (2015). *Transforming our World: The 2030 Agenda for Sustainable Development*. New York. <https://sdgs.un.org/2030agenda>
- UN. (2020). *United Nations Common Guidance on Helping Build Resilient Societies*.

- UNDP (Ed.). (2021). *Risk-Informed Development: A Strategy Tool for Integrating Disaster Risk Reduction and Climate Change Adaptation into Development*. <https://www.undp.org/publications/risk-informed-development-strategy-tool-integrating-disaster-risk-reduction-and-climate-change-adaptation-development#>
- UNDRR & United Nations General Assembly. (2016). *Report of the open-ended intergovernmental expert working group on indicators and terminology relating to disaster risk reduction*. <https://www.preventionweb.net/publication/report-open-ended-intergovernmental-expert-working-group-indicators-and-terminology>
- UNFCCC (Ed.). (2015). *Adoption of the Paris Agreement*. Paris. <https://unfccc.int/documents/9064>
- UN-Habitat. (2020). *The New Urban Agenda*. https://unhabitat.org/sites/default/files/2020/12/nua_handbook_14dec2020_2.pdf
- UN-Habitat. (2021). *City Resilience Profiling Tool*.
- UNISDR. (2015). *Sendai Framework for Disaster Risk Reduction 2015 - 2030: 2015-2030*. https://www.preventionweb.net/files/43291_sendaiframeworkfordrren.pdf
- Volgger, M., Erschbamer, G., & Pechlaner, H. (2021). Destination design: New perspectives for tourism destination development. *Journal of Destination Marketing & Management*, *19*, 100561. <https://doi.org/10.1016/j.jdmm.2021.100561>
- Volgger, M., & Pechlaner, H. (2015). Interdisciplinarity, transdisciplinarity and postdisciplinarity in tourism and hospitality education. In *Routledge handbooks, The Routledge handbook of tourism and hospitality education* (pp. 85–102). ROUTLEDGE.
- Waas, T., Hugé, J., Block, T., Wright, T., Benitez-Capistros, F., & Verbruggen, A. (2014). Sustainability Assessment and Indicators: Tools in a Decision-Making Strategy for Sustainable Development. *Sustainability*, *6*(9), 5512–5534. <https://doi.org/10.3390/su6095512>
- Woltersdorf, L., Lang, P., & Döll, P. (2019). How to set up a transdisciplinary research project in Central Asia: Description and evaluation. *Sustainability Science*, *14*(3), 697–711. <https://doi.org/10.1007/s11625-018-0625-7>
- Xu, L., Marinova, D., & Guo, X. (2015). Resilience thinking: a renewed system approach for sustainability science. *Sustainability Science*, *10*(1), 123–138. <https://doi.org/10.1007/s11625-014-0274-4>