

iscte

INSTITUTO
UNIVERSITÁRIO
DE LISBOA



**Universidade
Europeia**

Innovating in sustainable tourism: A nature-based Tourism (NBT) business model

Cristina Maria Costa Abreu

PhD in Tourism Management

Supervisors:

Doutora Catarina Marques, Associate Professor,
ISCTE-IUL Business School, Business Research Unit

Doutora Hélia Gonçalves Pereira, Associate Professor,
Rector at Universidade Europeia

December, 2023

Department of Marketing, Operations and General Management

Innovating in sustainable tourism: A nature-based Tourism (NBT) business model

Cristina Maria Costa Abreu

PhD in Tourism Management

Jury:

Doutor Ricardo Bilro, Auxiliar Professor, ISCTE
Doutora Rita Peres, Adjunct Professor, Escola Superior de Hotelaria e Turismo do Estoril
Doutora Cláudia Seabra, Associate Professor, Universidade de Coimbra
Doutora Sofia Almeida, Assistant Professor, Universidade Europeia
Doutora Catarina Marques, Associate Professor, ISCTE

December, 2023

Acknowledgements

First, I would like to thank my supervisors - although all words of gratitude will always be insufficient to emphasise their dedication and availability - Professor Catarina Marques and Professor Hélia Gonçalves Pereira, who were always been available for effective scientific guidance.

Secondly, I would like to thank all the entrepreneurs, public bodies and NGOs who volunteered to participate in the interviews, which enabled long conversations, sharing experiences, and gathering of critical information for this work.

I would also like to thank ISCTE and Universidade Europeia, as well as all the teachers involved in the Doctorate Program in Tourism Management, for their scientific and administrative support.

I would also like to thank my friends for their words of support and discussions that significantly contributed to the success of my work.

Finally, I would like to thank my family - particularly my husband, son, granddaughter Amélia, mother and sister- for their affection, comfort and understanding. After all, they are the basis of my existence.

Abstract

Nature-based tourism is one of the segments with the most critical development on both the supply and demand side, generating employment opportunities and businesses at the local level. However, this growth is rarely followed by adequate structures and skills to ensure the quality and sustainability of the services and the natural resources that support it. The main aim of this work was to develop an innovative sustainable business model for nature-based tourism companies. The study area is Portugal. This thesis integrates an exhaustive literature review of nature-based tourism, sustainable tourism, innovation, and business models. The thesis incorporates primary data collection through seventeen semi-structured face-to-face interviews with thirteen nature-based tourism entrepreneurs, one Non-Governmental Organisation (NGO) and three public institutions. The data analysis followed an exploratory qualitative research design through an inductive approach. The research analyses entrepreneurs, public institutions and NGO perceptions of sustainability and innovation and their role in long-term business/resilience and competitiveness in nature-based tourism. The results show that nature-based tourism companies introduce innovations to improve their performance and competitiveness; they act fundamentally in isolation and do not integrate stakeholders capable of supporting their sustainability orientation. The NGO and public institutions reported that many nature-based tourism companies mostly follow the market trends, that these businesses are not successful and that they are not sustainable. This research identifies the foremost entrepreneurs' limitations in innovating their business models, highlighting the mediating role of the principles proposed by Breuer et al. (2018) for developing innovative and sustainable business models. The results allowed for the presentation of a circular business model for nature-based tourism companies. Implementing the proposed model requires investing in training nature-based tourism entrepreneurs and the coherent internalisation of sustainability in organisations and companies' processes.

Keywords: Nature-based tourism, Sustainability, Innovation, Business Model, Innovation, Sustainable business models

Resumo

O turismo de natureza revela um crescimento acentuado, gerando oportunidades de emprego e negócios a nível local. No entanto, este crescimento nem sempre é acompanhado de estruturas e competências adequadas para garantir a qualidade e sustentabilidade dos serviços e dos recursos naturais que o suportam. O principal objetivo deste trabalho foi compreender e estabelecer um quadro conceitual para o turismo de natureza e desenvolver um modelo de negócio inovador e sustentável para o turismo de natureza. A área de estudo é Portugal. O trabalho integra uma revisão exaustiva da literatura em turismo de natureza, turismo sustentável, inovação e modelos de negócio. A tese incorpora a recolha de dados primários através de dezassete entrevistas semiestruturadas a treze empresários de turismo de natureza, uma Organização Não Governamental (ONG) e três instituições públicas. A análise dos dados primários seguiu uma metodologia qualitativa exploratória através de uma abordagem indutiva. Os resultados mostram que as empresas de turismo de natureza introduzem algumas inovações; atuam fundamentalmente de forma isolada e não integram *stakeholders* capazes de apoiar a sua orientação para a sustentabilidade. A ONG e as organizações públicas referiram que muitas empresas de turismo de natureza operam de acordo com as tendências de mercado, têm pouco sucesso e não são sustentáveis. Esta pesquisa identifica as principais limitações dos empreendedores em inovar os seus modelos de negócio, destacando o papel mediador dos princípios orientadores propostos por Breuer et al (2018) para o desenvolvimento de modelos de negócios inovadores e sustentáveis. Os resultados permitiram propor um modelo de negócio circular para empresas de turismo de natureza. A implementação do modelo proposto requer o investimento na capacitação dos empreendedores de turismo de natureza e a internalização do conceito de sustentabilidade de forma coerente na organização e nos processos das empresas.

Palavras Chave: Turismo de natureza, Sustentabilidade, Inovação, Modelos de Negócio, Modelos de Negócio inovadores e sustentáveis

Table of Contents

ACKNOWLEDGEMENTS	1
ABSTRACT	I
RESUMO	III
TABLE OF CONTENTS	V
LIST OF TABLES	VII
LIST OF FIGURES	VIII
ACRONYMS	IX
CHAPTER 1	3
GENERAL INTRODUCTION	3
1.1. CHAPTER OVERVIEW AND CONTEXTUALISATION	3
1.1.1 CONCEPTUALISING NATURE	4
1.1.2. THE CONCEPTUALISATION OF NATURE-BASED TOURISM	5
1.1.3. BRINGING SUSTAINABILITY AND INNOVATION WITHIN NATURE-BASED TOURISM	6
1.1.4. INTRODUCING INNOVATION IN TOURISM	8
1.1.5. BUSINESS MODELS IN NATURE-BASED TOURISM	10
1.1.6. DEVELOPING INNOVATIVE SUSTAINABLE BUSINESS MODELS FOR TOURISM	12
2. PURPOSE OF RESEARCH	13
3. SYNOPSIS OF THE STUDIES	14
4. METHODOLOGY	22
5. SCHEMATIC SUMMARY OF THE THESIS	24
6. REFERENCES	26
CHAPTER 2	32
STUDY I	32
UNDERSTANDING SUSTAINABILITY AND INNOVATION IN NATURE-BASED TOURISM BUSINESS MODELS: A SYSTEMATIC LITERATURE REVIEW	32
1. INTRODUCTION	33

2. LITERATURE BACKGROUND	35
2.1. NATURE-BASED TOURISM	35
2.2. SUSTAINABLE TOURISM	37
2.3. INNOVATION	38
2.4. BUSINESS MODELS	40
3. METHODOLOGY	42
4. QUANTITATIVE DESCRIPTIVE ANALYSIS OF THE SELECTED ARTICLES	45
5. UNDERSTANDING SUSTAINABILITY AND INNOVATION IN NBT BMS	48
5.1. SUSTAINABILITY IN NBT BUSINESS MODELS: LONG-TERM BUSINESS	48
5.2. INNOVATION IN NBT BMS: COMPETITIVE ADVANTAGE	51
6. DISCUSSION AND CONCLUSIONS	53
7. RESEARCH CONTRIBUTIONS	58
8. LIMITATIONS AND FURTHER RESEARCH AVENUES	59
9. REFERENCES:	60

ANNEX A	72
----------------	-----------

CHAPTER 3	84
------------------	-----------

STUDY II	84
-----------------	-----------

<u>ON THE RELEVANCE OF SUSTAINABILITY AND INNOVATION IN BUSINESS MODELS: THE PERCEPTIONS OF NATURE-BASED TOURISM ENTREPRENEURS, PUBLIC INSTITUTIONS, AND NGOS</u>	84
--	-----------

1. INTRODUCTION	85
2. THEORETICAL BACKGROUND	87
2.1. NATURE-BASED TOURISM AND SUSTAINABLE DEVELOPMENT	87
2.2. INNOVATION AND SUSTAINABILITY IN BUSINESS MODELS	89
3. METHODOLOGY	91
3.1. RESEARCH CONTEXT	91
3.2. METHODS	92
4. RESULTS	97
4.1. CONTENT ANALYSIS	97
5. DISCUSSION AND CONCLUSIONS	106
6. REFERENCES	116

CHAPTER 4	126
------------------	------------

STUDY III	126
------------------	------------

<u>BUSINESS MODELS FOR NATURE-BASED TOURISM COMPANIES: THE ADOPTION OF SUSTAINABLE REQUIREMENTS</u>	126
--	------------

1. INTRODUCTION	127
------------------------	------------

2. BUSINESS MODELS FOR INNOVATION AND SUSTAINABILITY	128
3. METHODS	133
3.1. SAMPLING	133
3.2. DATA COLLECTION AND ANALYSIS	134
4. RESULTS	136
4.1. SUSTAINABILITY ORIENTATION	137
4.2. EXTENDED VALUE CREATION	140
4.3. SYSTEMS THINKING	142
4.4. STAKEHOLDER INTEGRATION	143
5. DISCUSSION AND CONCLUSIONS	143
6. REFERENCES	152
 ANNEX C	 156
 CHAPTER 5	 158
 CONCLUSIONS	 158
 5.1. STUDIES' CONTRIBUTIONS TO THE SPECIFIC RESEARCH OBJECTIVES	 158
5.2. GENERAL CONCLUSIONS	161
5.3. RESEARCH CONTRIBUTIONS	164
5.3.1. THEORETICAL AND MANAGERIAL CONTRIBUTIONS	164
5.4. LIMITATIONS AND FURTHER RESEARCH AVENUES	166
5.4.1. THEORETICAL LIMITATIONS OF THE RESEARCH	166
5.4.2. FURTHER RESEARCH AVENUES	167
6. REFERENCES	170

List of Tables

<i>1 Table 1.1. Summary of the studies</i>	<i>18</i>
<i>2 Table 2.1. Articles per methodological approach</i>	<i>45</i>
<i>3 Table 2.2. Literature Discussing Sustainability in Buisness Models</i>	<i>50</i>
<i>4 table 2.3. Literature Discussing Innovation and Sustainability in Business Models</i>	<i>53</i>
<i>5 Table 3.1. Interview participants by activity</i>	<i>93</i>
<i>6 Table 3.2. Summary of the profile of the interviewees by activity, location, and number of employees</i>	<i>95</i>
<i>7 Table 3.3. Perceptions of Entrepreneurs, NGO, and Public Institutions</i>	<i>109</i>
<i>8 Table 4.1. Summary and characterisation of the companies interviewed by region</i>	<i>135</i>

List of Figures

1	Figure 1.1. Schematic summary of the studies	21
2	Figure 1.2. Schematic summary of the thesis	24
3	Figure 2.1. Systematic literature review summary process (Adapted from Maxim & Morrison, 2022)	44
4	Figure 2.2. Total of articles per year	46
5	Figure 2.3. Journals with two or more articles	47
6	Figure 2.4. Articles per researched themes	47
7	Figure 2.5. Articles per researched theme and year	48
8	Figure 2.6. Driving factors of ISBMs for NBT	55
9	Figure 2.7. Sustainability approach	57
10	Figure 3.1. Distribution of the age of the interviewees	96
11	Figure 3.2. Interviewees gender disaggregation	96
12	Figure 3.5. Drivers of an ISBM	111
13	Figure 3.6. Proposed ISBM framework	113
14	Figure 4.1. Interconnection between the guiding principles of Breuer et al. (2018) and the four drivers identified in Study II (sustainability, innovation, competitive advantage, and long-term/resilience).	
	Study III Study II	149

Acronyms

APP- Application

BM- Business Model

BMI-Business Model Innovation

GPD- Gross Domestic Product

ICNF- Instituto da Conservação da Natureza e das Florestas

ISBM- Innovative Sustainable Business Model

IT- Information Technology

IUCN- International Union for Conservation of Nature

NBT- Nature Based Tourism

NEST- Centro de Inovação do Turismo

NGO- Non-Governmental Organisation

PC- Personal Computer

R & D- Research and Development

TNC- The Nature Conservancy

SBM- Sustainable Business Model

UN SDG- United nations Sustainable Development Goals

ST- Sustainable Tourism

UK- United Kingdom

UN- United Nations

UNESCO- United Nations Educational Scientific and Cultural Organisation

UNWTO- World Tourism Organization

USA- United States of America

WWF- World Wildlife Fund

5Ps- Five Ps- People, Planet, Peace, Prosperity, and Partnership

Chapter 1

General Introduction

1.1. Chapter Overview and Contextualisation

The present document is a compilation thesis, i.e. it encompasses the introduction, the conclusion and three studies developed during the doctoral program period. The introduction frames all the studies and synthesises the main findings into a coherent contribution.

The research performed in this thesis focused on nature-based tourism companies. This chapter provides a literature review on the main areas of research that support and justify this thesis, namely: Nature-based Tourism, innovation, sustainability, and Business Models. Moreover, it summarises all the research, including the research purpose, a synopsis of the studies, the methodology adopted in each study and the references.

The literature review and interviews with nature-based tourism entrepreneurs, public bodies and NGO enabled an understanding of the approach of these companies towards the principles of sustainability. The research has allowed for an analysis of the business models of the nature tourism companies that agreed to participate. The interviews with the various participants provided relevant primary information that enabled the comparison between the opinions of the entrepreneurs and those of the heads of public organisations and NGO on the subjects under analysis. Supported by the research, it is possible to propose an innovative sustainable business model for nature-based tourism companies designed according to the United Nations' sustainability principles.

1.1.1 Conceptualising Nature

Natural resources support human activities. From a philosophical perspective, we observe nature through sensory perception (Whitehead, 1920). The Oxford Thesaurus of English (Oxford University Press, n.d.) defines nature as the physical world, including plants, animals, and all things not made by people. It also refers to the natural world, the environment, Mother Earth, the Universe, the cosmos, the wildlife, the countryside, and the land. In the tourism sector, particularly in the nature-based tourism sector, nature plays a relevant role, being one of the fundamental pillars of this economic activity. From an economic point of view, since 1970, nature can be defined as a service provider, where the ecosystem functions are classified as services and detain an economic value, a perspective quickly adopted by governments and financial sectors (Gómez-Baggethun, 2010). As a service provider, nature responds to the increase in economic demand, which is responsible for shifting the natural equilibrium (Holling, 1973). A servicescape perspective presents nature as an elaborated and complex environment with an extensive range of functions performed within the physical realm, which influence customers' and employees' internal responses to the environment (Bitner, 1992). Other framings of nature are related to distinct priorities, objectives and methods (Ducarme & Couvet, 2020). Ducarme and Couvet (2020) consider the concept of "nature" more complex and abstract than it seems, suggesting a "wise use" of the concept, complemented with other scientific concepts such as "biodiversity", "evolution", "ecosystem", "landscape", "wildness", "population" and "community".

Nature becomes the underpinning for a unique and sustainable way of travelling, in which the beauty of nature becomes both the destination and the inspiration for unforgettable experiences. Nature in nature-based tourism is the main stage of operations, a servicescape impacting tourists and suppliers at the sensorial level (Fredman et al., 2012), and it can be commercialised by suppliers, consumed and experienced by tourists (Fredman et al., 2012). Nature-based tourism offers the magnificence of the natural world and promotes its preservation, fostering a harmonious relationship between humanity and the environment.

1.1.2. The conceptualisation of Nature-based tourism

Nature-based tourism occurs in relatively unmodified, undeveloped natural areas outside one's home and should include tourist activities (Fennel, 2000; Saarinen, 2014). Nature-based tourism can overlap with ecotourism Goodwin (1996), leading to the lack of a consensual definition of nature-based tourism (Soleimani et al., 2019).

Laarman and Durst (1987) defined nature-based tourism as “nature travel” or “nature-oriented tourism”, introducing educational, recreational and adventure in the concept. Lang and O’Leary (1997) simplified the concept by defining nature-based tourism as the tourists who travel to natural areas or destinations. Moreover, Fennell (2000) mentioned that nature-based tourism relies on natural resources, describing it as “Responsible travel to natural areas that conserves the environment and improves the welfare of local people” (p. 97). Other definitions consider nature-based tourism as tourism that consists of all forms of tourism that is based on the use of natural resources, rich in nature, profiting from its wildness, landscape, diverse biodiversity, which promotes environment conservation and improves locals welfare (Goodwin, 1996; Fennell, 2000; Lundmark & Müller, 2010).

Nature-based tourism can be considered consumptive, such as hunting, where the concepts of nature-based tourism and ecotourism overlap (Fennell, 2000). Mehmetoglu (2005) introduced tourists' preferences in nature-based tourism, considering different typologies of tourists according to the different types of nature-based tourism experiences. Fredman et al. (2009) defined nature-based tourism as a broad concept: “Nature-based tourism is human activities occurring when visiting nature areas outside the person's ordinary neighbourhood” (as cited in Fredman & Tyrväinen, 2010, p.181). The previous definition of nature-based tourism considers the activities performed by nature tourists. It categorises nature-based tourism in different sub-categories according to the purpose and context of tourists' visits.

Most definitions are based on nature conservation and environmental conscientiousness (Fredman & Tyrväinen, 2010) and do not associate recreation and adventure (Fredman et al. 2012).

However, other definitions of nature-based tourism encompass the economic nature of this activity and its importance for local development. Steven et al. (2013) consider nature-based tourism as a cultural service provider contributing to public awareness with a relevant impact on financial support for biodiversity conservation, promoting regional development and

diversifying the rural-based economy. Margaryan (2017) assumed nature-based tourism to be tourism that deals with selling nature (i.e., a place where the degree of human activity is relatively low) by creating nature-related experiences and introducing a commercial value of nature.

Through its 2015 National Program of Nature Tourism, Portugal replaced the 1998 National Program of Nature Tourism, considering all classified areas and establishing that nature-based tourism involves an integrated practice of diversified activities and enjoying the natural environment in various forms. Simultaneously, in Portugal, a trademark was created, Natural.PT, linked with the National System of Classified Areas, promotes natural and cultural heritage and catalyses local and regional development (<https://www.icnf.pt/turismodenatureza/tnenquradamentolegal>). Notwithstanding, the research evidenced that nature-based tourism in Portugal occurs out of classified areas.

1.1.3. Bringing Sustainability and Innovation within nature-based tourism

1.1.3.1. Tourism and Sustainability

During the 20th century, tourism has been interpreted in different ways. Krapf and Hunziker (1942) defined tourism as “the set of relations and phenomena produced by the movement and stay of persons outside their place of residence, provided that such movements and stays are not motivated by a lucrative activity” (as cited in in Burkart e Medlik, 1981). This definition excludes the economic component and travelling reasons. In 1994, the World Tourism Organisation (UNWTO, 1994) defined tourism as “The activities of persons travelling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes” (p. 5). This definition unified the term in all countries and among all professionals, allowing the production of uniform statistical data.

The phenomenon of tourism has existed since ancient times. The Romans spent the summer in their villas, breaking from metropolitan life. Later, during the Enlightenment period, the nobility undertook long journeys, giving rise to the Grand Tour. Those trips were undertaken by young nobles whose primary motivation was cultural immersion. Recently, since the 1950s,

however, leisure travel includes all social classes. Mass tourism, characterised by standardised and inexpensive travel, became widespread in the 1960s, with significant growth, becoming one of the most important economic sectors worldwide. The democratisation of tourism leads to its massification and, consequently, to relevant environmental, socio-cultural and economic challenges (Abreu et al., 2022).

In tourism and particularly in nature-based tourism (NBT), nature plays a relevant role, being one of the critical pillars of this economic activity. Economic activities depend directly and indirectly on nature and natural resources. For decades, tourism has been recognised as an activity with a significant economic impact and little environmental and social impact. This view of tourism is outdated, allowing us to prompt a holistic and critical discussion about tourism (Ateljevic et al., 2007). Thus, the need arises to consider tourism's environmental, socio-cultural, and economic dimensions, giving rise to implementing good practices in tourism and a gradual change in this sector, moving towards its sustainability.

The word “sustainable” is a direct translation of the German word “nachhaltig”, used by Hanns Carl Von Carlowitz (1645-1714) in his book “The Sylvicultura Oeconomica”, and adopted by the English as “sustained yield”, meaning “wise use”, since the 18th century, to promote a European conscientiousness of natural resources management. Later, the concept of ecology, introduced by Ernest Haeckel in 1866, strengthened the relationship between sustainability and environmental and natural resource conservation.

Sustainability is expressed directly or indirectly in various activities and businesses, but its interpretations are diverse (Lankoski, 2016). Sustainability definitions, according to researchers' objectives, may focus on different pillars, such as the (1) environmental perspective considering nature as a material provider and expressing the possibility of an infinite replacement, (2) through an economic approach concentrated on economic growth limits or (3) based on the social pillar of sustainability, improving social benefits and enhancing the stakeholder participation (Vos, 2007).

Sustainability means the interconnection of three dimensions- environment, social and economy- where each dimension mutually supports and reinforces one another (Vos, 2007). Other definitions of sustainability convey a balanced perspective, revealing an equity concept through a balance between the economic, environmental, and social dimensions (Geissdoerfer et al., 2017; Breuer et al., 2018).

In the 70s, the Club of Rome report “The Limits to Growth” and the United Nations Stockholm conference in 1972 identified the relationship between human life and environmental quality. The Brundtland Report (1987) defined sustainability and sustainable development reflecting a global approach of sustainability, including environmental, economic, and social dimensions, through an intergenerational balance as “... development that meets the needs of the present without comprising the ability of future generations to meet their own needs”.

In 1992, at the United Nations Conference on Environment and Development, the concept of sustainable development was extended to tourism, leading to the concept of sustainable tourism. In 1993, the World Tourism Organization (WTO) defined sustainable tourism as promoting economic growth and preserving the environment and heritage, with positive repercussions for the host communities, visitors and tourism sector. Bramwell et al. (2017) defined sustainable tourism as considering the social, economic, cultural, environmental, and political dimensions, improving societal behaviour towards sustainable development.

Sustainable tourism is a multi-dimensional concept (Liu, 2003; Lane, 2018; Tokmak, Dogantekin & Kiliç, 2017), mitigating the environmental, economic and social impacts and contributing to population well-being (Nunkoo et al., 2019).

This thesis follows the perspective of sustainable tourism proposed by Bramwell et al. (2017) as an economic activity that promotes exchange between different goals more than the promotion of the balance among them. The adoption of sustainability principles is not frequent in nature-based tourism literature (Reinhold et al., 2017). Nevertheless, sustainability should be the pillar of tourism (Torres-Delgado & López Palomeque, 2012).

The commitment to sustainability sets the underpinnings for the transformation of the tourism offer, leading to the exploration of inventive solutions in the field of nature-based tourism. As we explore the delicate balance between tourist experience, human well-being and nature conservation, the need for innovative approaches in nature-based tourism becomes increasingly evident.

1.1.4. Introducing Innovation in Tourism

Thirty years after the introduction of sustainable tourism, there is still a lack of tourism with fewer negative environmental impacts (Lane, 2017). It is also apparent that there is a need to

expand this concept into a broader one that includes innovative products and services and innovative destination management, according to the same author (Lane, 2017).

Innovation in tourism contributes to sustainable competitive advantage and improves companies' performance and differentiation (Prange & Schlegelmilch, 2016).

Innovation may result from a discussion, interaction with customers, and market competitiveness, meaning that innovation can emerge from everything in the companies (Pantea et al., 2016). Innovation is "an ability to understand and identify the future customer needs, expectations and potential customers promptly and responding appropriately, application of organisational internal including employees and external knowledge by developing an innovation support organisational culture to create new ideas and transform them into successful innovations" (Rajapathirana & Hui, 2018, p.52). Other simplified definitions of innovation such as "an innovation is the implementation of a new or significantly changed product or process" (Gault, 2018, p.619), or "the process of development and the introduction of new goods or services" (Kuzman et al., 2019, p.420) were emerged. Innovation is also defined as a thriving new commercial idea, implicitly introducing the indicator concept through monitoring and measurement tools considering commercialised and non-commercialised innovative ideas (Dziallas & Blind, 2019).

Tourism is among the most competitive economic activities (Divisekera & Nguyen, 2018), and there is limited research on tourism innovation and its impacts on destinations and national economies (Hjalager, 2010; Jensen & Prebensen, 2015). Innovation influences long-term business in tourism (Ortiz-villajos & Sotoca, 2018; Divisekera & Nguyen, 2018), and small remote tourism firms, such as nature-based tourism firms, can improve their competitiveness through innovation (Jensen & Prebensen, 2015; Nybakk & Hansen, 2008). Moreover, organisational innovation involves the implementation of alternative paradigms, differing from the view of the economic worldview and in line with sustainable development, where the business model plays the role of innovation mediator (Boons & Lüdeke-Freund, 2013).

1.1.5. Business models in Nature-based tourism

1.1.5 1. Positioning nature-based tourism in the economy

Tourism adopts the appropriate strategies for responding to market demands. Natural resources are the basis of different approaches to tourism, as is the case of NBT, which is frequently associated with small and family businesses. Traditionally, managers create offerings based on the most relevant natural assets through small companies, often managed by one or two persons (Omerzel, 2016). It is worth considering that tourists previously plan their trips and visits to natural areas, deciding when and what to visit, where to stay, and the duration of each visit (UNWTO n.d.). Tourists ask for tailor-made experiences, forcing nature-based tourism companies to adapt their interaction with tourists, requiring significant changes in their business models (UNWTO n.d.).

World Organisations, such as The Nature Conservancy (TNC) (<https://www.nature.org/en-us/>), the International Union for Conservation of Nature (IUCN) (<https://www.iucnredlist.org>), the Birdlife International (<https://www.birdlife.org/>), and the World Wildlife Fund (WWF) (<https://www.worldwildlife.org/>) refer to the need to improve Human lifestyle through adopting new behaviours compatible with a sustainable development model, able to respond to markets' demands. TNC stresses the relevance of including nature conservation principles in business management, considering a balance between our way of living and nature (<https://www.nature.org/en-us/>). As mentioned in the N4C_Nature Positive Recovery, prepared by TNC in 2020, tourism has a considerable role in the global economy, representing 10.4% of global GDP, which corresponds to 21.8% of world jobs, where NBT represents 3.9% of the global GDP, providing 6.8% NBT jobs. These figures reflect the relevant contribution of tourism and nature-based tourism to the world's economy. However, adopting unique lifestyles implies the inclusion of the value of nature in business through new management strategies guided by new business models, which can be formally or informally present in nature-based tourism companies.

1.1.5.2. Defining Business Model

The literature presents definitions of business models from different perspectives, ranging from the business model as a strategy (Shafer et al., 2005), as a tool (Magretta, 2002; Chesbrough, 2010; Teece, 2010; Baden-Fuller & Haefliger, 2013; Ritter & Lettl, 2018), which should be in line with companies' strategies (Richardson, 2008), or as a set of distinct elements to create value, value share and enhance competitive advantage (Schneider & Clauss, 2019). A business model is also considered an interrelated activities system perspective (Zott & Amit, 2010; Wirtz et al., 2016). Business models include sustainable innovations, considering value propositions to customers, and a value-creating sphere where companies and suppliers are connected (Boons & Lüdeke-Freund, 2013). A business model is also defined as “a description of an organisation and how that organisation functions in achieving its goals (e.g., profitability, growth, social impact,...)” (Massa et al., 2014, p.2) or through a service ecosystems perspective as “a relatively self-contained, self-adjusting system of resource – integrating actors connected by shared institutional arrangements and mutual value creation through service exchange”, integrating the institutional nature of value co-creation and resource integration (Vargo & Lush, 2016, p.10-11). A business model is “how the enterprise delivers value to customers, entices customers to pay for value, and converts those payments to profit” (Teece, 2018, p.173).

The literature prompts the absence of a general definition of business model (Cosenz & Noto, 2018; Ritter & Lettl, 2018). Moreover, the introduction of the business model concept in tourism is recent and literature on business models in tourism is sparse (Rheinhold et al., 2017). Clarifying the business model concept will improve strategies and companies' decision-making (Fjeldstad & Snow, 2018). This thesis considers a business model as a tool that combines different functions such as value proposition, identifies a market segment, defines the structure of the value chain, the revenue mechanisms, estimates the costs and profits, positions the companies regarding suppliers and customers, and defines the competitive strategy through innovation (Teece, 2010; Chesbrough, 2010; Ritter & Lettl, 2018). For that purpose, we adopt the definition of innovative sustainable business model proposed by Lüdeke-Freund et al. (2019): “Business model innovation for sustainability improves a company's ability to create, maintain, or regenerate natural, social and economic capital beyond its organisational boundaries by changing the value proposition for its customers and all other stakeholders and how value is created, delivered and captured (p.105).

1.1.6. Developing innovative sustainable business models for tourism

External and internal changes may be responsible for business model evolution, and therefore, business models must be understood from a dynamic perspective (Wirtz et al., 2016). Reinhold et al. (2017) propose a common conceptual basis and relevant knowledge for researching business models in tourism, moving from the existing configurations of business models in tourism to new and emerging ones. Business model innovation is a requirement for sustainability (Schaltegger et al., 2012; França et al., 2017), for competitive advantage and companies market entrance, particularly in emerging economies (Chesbrough, 2010; Boons et al., 2013; Boons & Lüdeke-Freund 2013; Massa et al., 2017; Breuer et al., 2018). Nevertheless, innovation in business models is limited by knowledge and skills, frequently non-existent in small family and countryside firms (Omerzel, 2016).

Companies' sustainability orientation is critical to developing a sustainable business model (Breuer et al., 2018). Stubbs and Cocklin (2008) developed a sustainable business model, stressing that sustainability can be achieved through profits and completely transforming companies' business models. Adopting a sustainable business model may promote companies' sustainable value and reliability (Schneider & Clauss, 2019). However, introducing sustainability in a business model evidences innovation and requires previous business models to suit (Schaltegger et al., 2012).

The literature provides several definitions of sustainable business models. Schaltegger et al. (2016) defined a sustainable business model as a tool that "helps to describe, analyse, manage, and communicate (i) a company's sustainable value proposition to its customers, and all other stakeholders, (ii) how it creates and delivers this value, (iii) and how it captures economic value while maintaining or regenerating natural, social, and economic capital beyond its organisational boundaries"(p. 268). Geissdoerfer et al. (2016), definitions of sustainable business model are a "simplified representation of the elements, and the interrelations between these elements, that an organisation employs to create, deliver, capture, and exchange sustainable value for, and in collaboration with, a broad range of stakeholders" (p. 1218). Lüdeke-Freund et al., (2019) defined innovative sustainable business model as "Business model innovation for sustainability improves a company's ability to create, maintain, or regenerate natural, social and economic capital beyond its organisational boundaries by

changing the value proposition for its customers and all other stakeholders and how value is created, delivered and captured” (p.105).

A sustainable business model should evidence companies’ design principles, value-creating activities, and interaction to provide the best solution for customers and companies (Lüdeke-Freund et al., 2018).)

Introducing a strategic sustainable design in business model innovation encompasses a different approach to the business model, contributing to reducing business risk and strategic sustainable development (França et al., 2017).

2. Purpose of research

Nature-based tourism configures a relevant contribution to the world’s economy, but the literature reveals a research gap for a deeper understanding of nature-based tourism business models. Additionally, the literature highlights a research gap in innovative and sustainable business models for nature-based tourism businesses. This thesis therefore aims not only to fill these research gaps in the literature by providing primary data on nature-based tourism business models but also proposing an innovative and sustainable business model for nature-based tourism companies. The research fills the gap left by the scarcity of research on business models in nature tourism companies. It includes the perspectives of nature tourism entrepreneurs regarding implementing an innovative and sustainable business model in their companies.

The thesis encompasses three studies to help answer the main research questions: (1) How do innovative sustainable business models for nature-based tourism contribute to achieving innovation and sustainability? (2) To what extent do nature-based tourism companies implement innovative sustainable business models? (3) What sustainable business model requirements do nature-based tourism companies adopt in their business model?

In this thesis, we have adopted a strategy to answer the research questions, setting some objectives to be responded to through a series of studies.

This thesis aims to provide a deeper understanding of nature-based tourism business models, particularly concerning innovative sustainable business models, particularly to (1) understand sustainability and innovation in Nature-Based Tourism business models, (2) understand the existing nature-based tourism business models, (3) understand nature-based tourism

entrepreneurs' perceptions of sustainability, innovation, competitive advantage, and long-term business/ resilience in their business models; (4) propose an innovative sustainable business model for nature-based tourism companies; (5) understand what sustainable business model requirements nature-based tourism companies adopt in their business model.

The contributions of this thesis are at five levels. First, it analyses the literature on the relevant topics of this research (nature-based tourism, innovation, sustainability, and business models); second, it characterises nature-based tourism entrepreneurs; third, it encompasses nature-based tourism entrepreneurs' perceptions of innovation and sustainability, competitiveness, and long-term/resilient business in nature-based tourism companies; fourth, it analyses what sustainable business model requirements nature-based tourism companies adopt in their business model; fifth, it proposes an innovative sustainable business model for nature-based tourism.

3. Synopsis of the studies

This thesis comprises three studies developed sequentially according to the objectives defined. The three studies made it possible to understand the relevance of implementing an innovative sustainable business model in nature-based tourism and its significance for nature-based tourism companies' competitiveness and long-term business.

Study 1. The first study, "Understanding Sustainability and Innovation in Nature-Based Tourism Business Models: a Systematic Literature Review", reviews the literature on business models, innovation and sustainability and the embodiment of these concepts into nature-based tourism. The main aims of the study are: (i) to conduct a literature review of the research published on business models for tourism and nature-based tourism; (ii) to identify, evaluate, and synthesise research on business models for nature-based tourism; (iii) to provide a discussion on the research themes and trends; (iv) to yield an understanding based on the studies included how business models in nature-based tourism companies are changing to incorporate innovation and sustainability; (v) to stimulate a debate on innovative sustainable business models and their impacts on long-term business performance and competitiveness in nature-based tourism companies. The study's main contributions are new insights into the role of sustainability and innovation in nature-based tourism business models and how innovation and sustainability determine performance, resilience, risk reduction, resource use minimisation,

business performance, and long-term business. The study presents working definitions of nature-based tourism and innovative sustainable business models and conveys an understanding of sustainability.

Study 2. The second study, “On the relevance of sustainability and innovation in business models: The perceptions of nature-based tourism entrepreneurs, public institutions, and NGOs”, builds on the first study, seeking to understand the perceptions of NBT entrepreneurs, public institutions, and an NGO on the importance of sustainability and innovation in the business models of nature-based-tourism companies and how these assets contribute to competitiveness and long-term business/resilience. The objectives of this study are: (i) to understand the perceptions of nature-based tourism companies on sustainability, innovation, competitive advantage, long-term business/ resilience, and their role in their business models; (ii) to understand the vision of public institutions and the NGO on sustainability, innovation, competitiveness and long-term business in nature-based tourism business models; (iii) to typify nature-based tourism companies; (iv) to understand how far current nature-based tourism business models embed sustainable management initiatives and innovation; (v) understand how their business models align with sustainable development and with an ideal innovative sustainable business model. The main contributions of this study are the understanding of nature-based tourism managers, public institutions, and the NGO perceptions of sustainability and innovation, long-term business, resilience, and competitive advantage in nature-based tourism companies. The study contributes to the literature by characterising Portuguese nature-based tourism companies’ business models, focusing on their commitment to a sustainable development model, and understanding how they align with an innovative sustainable tourism business model. The study identifies four drivers of an innovative sustainable business model: innovation, sustainability, competitive advantage, and long-term/resilience. Finally, this study proposes a framework for an innovative sustainable business model for nature-based tourism companies.

Study 3. The third study, “What sustainable business model requirements nature-based tourism companies adopt in their business model?” discloses the main constraints of nature-based tourism entrepreneurs in adopting the four principles of business model for sustainability proposed by Breuer et al. (2018) and exposes the relevance of innovative sustainable business

models in nature-based tourism companies. The main objectives of the study are: (i) to understand what sustainable business model requirements nature-based tourism companies adopt in their business model; (ii) to discuss the constraints nature-based tourism companies face in adopting Breuer et al. (2018) principles; (iii) understanding the relevance of developing an innovative sustainable business model for nature-based tourism companies; (iv) validate the relevance of developing an innovative sustainable business model for nature-based tourism companies. This study adopted an exploratory qualitative research design and an inductive approach, conducting a qualitative data analysis through face-to-face interviews. The study provides the most relevant interview results, summarised according to the four principles of business model innovation for sustainability proposed by Breuer et al. (2018). The study outlines how the Portuguese NBT companies adopt Breuer et al. (2018) guiding principles in developing business model innovation for sustainability. This study analyses the results obtained in study II and their implications for this study. The study discusses nature-based tourism entrepreneurs' constraints in adopting these principles. It confirms the relevance of developing an innovative sustainable business model framework for nature-based tourism companies, as proposed in the second study of this thesis.

Table 1.1. Summary of the studies (Author's elaboration)

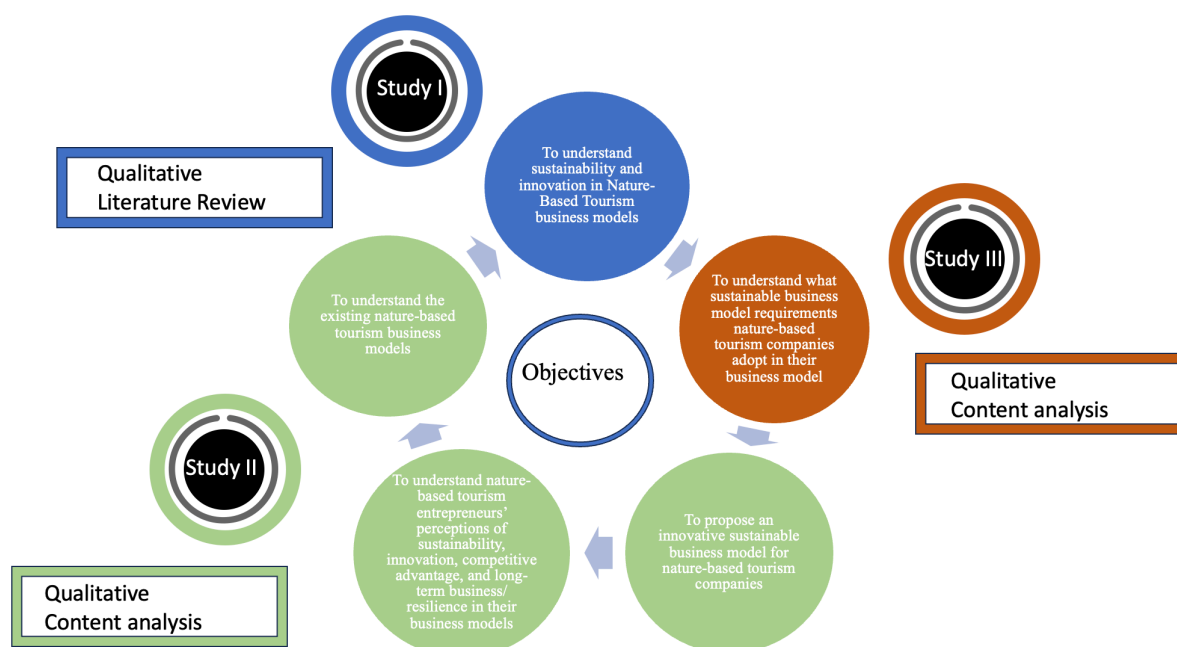
Studies	Main research objective	Data	Methodology	Analysis	Research question	Main objectives
Study 1 (Chapter 2)	1. conduct a literature review of the research published on business models for tourism and nature-based tourism 2. identify, evaluate, and synthesise research on business models for nature-based tourism 3. provide a discussion on the research themes and trends 4. yield an understanding based on the studies included how business models in nature-based tourism companies incorporate innovation and sustainability 5. to stimulate a debate on innovative sustainable business models and their impacts on long-term business performance and competitiveness in nature-based tourism companies 6. propose definitions of nature-based tourism and innovative sustainable business models	Secondary data (articles)	Qualitative	Literature review	RQ1. How do innovative sustainable business models for nature-based tourism contribute to achieving innovation and sustainability?	(1) To understand sustainability and innovation in Nature-Based Tourism business models;

Studies	Main research objective	Data	Methodology	Analysis	Research question	Main objectives
Study 2 (Chapter 3)	1. understand the perceptions of nature-based tourism companies on sustainability, innovation, competitive advantage, long-term business/ resilience, and their role in their business models 2. understand the vision of public institutions and the NGO on sustainability, innovation, competitiveness, and long-term business in nature-based tourism business models 3. typify nature-based tourism companies and understanding how far current nature-based tourism business models embed sustainable management initiatives and innovation 4. understand how far current nature-based tourism business models embed sustainable management initiatives and innovation 5. understand how their business models align with sustainable development and with an ideal innovative sustainable business model.	Primary data (Semi-structured interviews)	Qualitative	Content analysis	RQ 2. To what extent do nature-based tourism companies implement innovative sustainable business models?	(2) To understand the existing nature-based tourism business models; (3) To understand nature-based tourism entrepreneurs' perceptions of sustainability, innovation, competitive advantage, and long-term business/ resilience in their business models; (4) To propose an innovative sustainable business model for nature-based tourism companies;

Studies	Main research objective	Data	Methodology	Analysis	Research question	Main objectives
Study 3 (Chapter 4)	1. understand what sustainable business model requirements nature-based tourism companies adopt in their business model 2. discuss the constraints nature-based tourism companies face in adopting Breuer et al. (2018) principles 3. understand the relevance of developing an innovative sustainable business model for nature-based tourism companies 4. validate the relevance of developing an innovative sustainable business model for nature-based tourism companies	Primary data (Semi-structured interviews)	Qualitative	Content analysis	RQ 3. What sustainable business model requirements do nature-based tourism companies adopt in their business model?	(5) To understand what sustainable business model requirements nature-based tourism companies adopt in their business model;

Summarising, the thesis begins with an in-depth analysis of the literature on business models, innovation, sustainability, and nature-based tourism. The thesis discusses the role of sustainability and innovation in nature-based tourism business models and how innovation and sustainability contribute to improving nature-based tourism performance, resilience, risk reduction, resource use minimisation, business performance, and long-term business (Study 1). The research examines the perceptions of nature-based tourism entrepreneurs, public institutions, and an NGO on the importance of sustainability and innovation in the business models of nature-based-tourism companies and how these assets contribute to competitiveness and long-term business/resilience. The results prompted a theoretical framework of an innovative sustainable business model framework for nature-based tourism companies (Study 2). The thesis ends (Study 3) by discussing nature-based tourism entrepreneurs' main constraints in adopting the Breuer et al. (2018) guiding principles and validates the innovative sustainable business model proposed in study 2.

Figure 1.1. Schematic summary of the studies (Author's elaboration)



4. Methodology

The thesis analyses the importance of adopting an innovative and sustainable business model in nature-based tourism companies and how this model contributes to the competitiveness and long-term/resilience of nature-based tourism businesses. To achieve the objectives of the thesis, primary and secondary data were collected on nature-based tourism companies and the associated business models. Accordingly, primary data collection involves semi-structured interviews with entrepreneurs of nature-based tourism, public institutions, and an NGO. Secondary data was collected using the Google search engine by searching various databases such as Scopus, ProQuest, Web of Science, Taylor & Francis, and Emerald. Secondary data was also collected from the websites of the nature-based tourism companies included in this study and from institutional entities such as public institutions and NGO.

The selection of the nature-based tourism companies considered the activity developed and the contents of each website, providing a comprehensive overview of the firms adopting sustainable and innovative measures, their commitment to long-term business, and competitiveness. All firms certified as nature-based tourism and companies offering nature-based tourism experiences in Portugal were invited to participate in the interview process. Thirteen nature-based tourism entrepreneurs accepted the challenge of being interviewed. One NGO and three public institutions with responsibilities in tourism were also invited to participate in the research. The following paragraphs present the methodological approach adopted in the studies that make up this thesis.

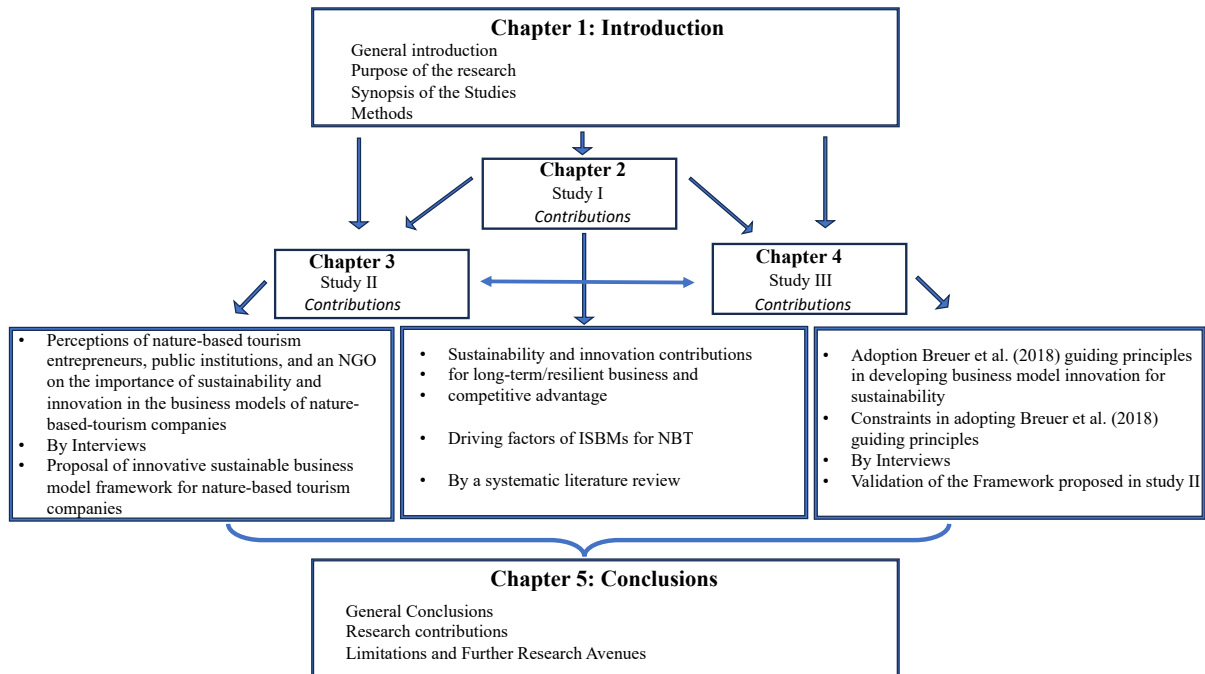
Study 1. This study adopts a systematic literature review, following the four steps proposed by Bryman (2012): (1) define the purpose of the review; (2) seek out studies relevant to the scope and purpose of the review; (3) appraise the studies identified in step two; (4) analyse each study and synthesise the results. Search terms were defined to find relevant articles addressing the topics of this review (Siddaway et al., 2019). Data collection resulted from a systematic search of databases: ProQuest, Taylor & Francis, Scopus, Web of Science, and Emerald. This study includes an analysis of the literature through a deductive content method.

Study 2. This study adopted an exploratory qualitative research design through an inductive approach and content analysis. Data collection includes thirteen interviews with nature-based tourism entrepreneurs operating for at least five years, one NGO, three public institutions with responsibilities in tourism and data collected from websites of the companies interviewed. This study adopted an exploratory qualitative research design using an inductive approach through semi-structured interviews with nature-based tourism entrepreneurs, public institutions, and an NGO. A triangulation of the content analysis of the interviewees' perceptions with the information collected in articles was applied to achieve the research objectives. A semi-structured interview protocol with open-ended questions was developed to guide the interview towards the topics under analysis, allowing interviewees to answer the main topics openly. The interview protocol is organised on five topics: (i) characterisation of the company; (ii) Sustainability; (iii) Innovation; (iv) Long-term business/Resilience and competitive advantage; and (v) Market and client profiles. A qualitative analysis was performed through a rigorous approach of data collection, data analysis, written reporting, and accuracy of the findings through validation procedures, such as interviews' listening, transcription and reading, articles reviewing and nature-based tourism companies' website data.

Study 3. This study analyses information through an exploratory qualitative research design and an inductive approach. A qualitative data analysis through face-to-face interviews was performed. Thirteen interviews with nature-based tourism companies operating for at least five years were delivered. A semi-structured interview protocol with open-ended questions was developed to guide the interviewer towards the topics under analysis. This study adopted the same interview protocol applied in study 2. The interview allowed interviewees to express the adoption of Breuer et al. (2018) guiding principles of business model innovation for sustainability (Interview protocol in Study 2). Data validation occurred through interview listening, transcription, interpretation, and literature data triangulation.

5. Schematic summary of the thesis

Figure 1.2. Schematic summary of the thesis (Author's elaboration)



6. References

- Abreu, C., Tardieu, F., & Abreu, A. D. (2022). 4 . Conservation tourism in Pangatalan island , Palawan UNESCO Biosphere Reserve, 38–48.
<https://doi.org/http://dx.doi.org/10.4337/9781839100185>
- Ateljevic, I., Harris, C., Wilson, E., & Collins, F. L. (2005). Getting ‘entangled’: Reflexivity and the ‘critical turn’ in tourism studies. *Tourism Recreation Research*.
<https://doi.org/10.1080/02508281.2005.11081469>
- Baden-Fuller, C., & Haefliger, S. (2013). Business Models and Technological Innovation. *Long Range Planning*, 46(6), 419–426. <https://doi.org/10.1016/j.lrp.2013.08.023>
- Bitner, M. J. (1992). Servicescapes: The impact of Physical Surroundings on Customers and employees. *Journal of Marketing*, 56(April, 1992), 57–71.
- Boons, F., & Lüdeke-Freund, F. (2013). Business models for sustainable innovation: State-of-the-art and steps towards a research agenda. *Journal of Cleaner Production*, 45, 9–19.
<https://doi.org/10.1016/j.jclepro.2012.07.007>
- Boons, F., Montalvo, C., Quist, J., & Wagner, M. (2013). Sustainable innovation, business models and economic performance: An overview. *Journal of Cleaner Production*, 45, 1–8. <https://doi.org/10.1016/j.jclepro.2012.08.013>
- Bramwell, B., Higham, J., Lane, B., & Miller, G. (2017). Twenty-five years of sustainable tourism and the Journal of Sustainable Tourism: looking back and moving forward. *Journal of Sustainable Tourism*, 25(1), 1–9.
<https://doi.org/10.1080/09669582.2017.1251689>
- Breuer, H., Fitcher, K., Tiemann, I. (2018). Sustainability-oriented business model development : principles , criteria and tools. *Int. J. Entrepreneurial Venturing*, 10(2), 256–286. <https://doi.org/10.1504/ijev.2018.10013801>
- Bryman, A. (2015). The nature and process of social research. *Social Research Method*, 3–16.
- Burkart, A. J.; Medlik, S. – Tourism - past, present and future, 2a ed., London, Heinemann, 1981.
- Chen-Te Lang & Joseph T. O’Leary. (1997). Motivation, Participation, and Preference: A Multi-Segmentation Approach of the Australian Nature Travel Market. *Journal of Travel & Tourism Marketing*, 6:3(4), 159–180. https://doi.org/10.1300/J073v06n03_10
- Chesbrough, H. (2010). Business model innovation: Opportunities and barriers. *Long Range Planning*, 43(2–3), 354–363. <https://doi.org/10.1016/j.lrp.2009.07.010>
- Cosenz, F., & Noto, G. (2018). A dynamic business modelling approach to design and experiment new business venture strategies. *Long Range Planning*, 51(1), 127–140.
<https://doi.org/10.1016/j.lrp.2017.07.001>

- Divisekera, S., & Nguyen, V. K. (2018). Determinants of innovation in tourism evidence from Australia. *Tourism Management*, 67, 157–167. <https://doi.org/10.1016/j.tourman.2018.01.010>
- Ducarme, F., & Couvet, D. (2020). What does ‘nature’ mean? *Palgrave Communications*, 6(1), 1–8. <https://doi.org/10.1057/s41599-020-0390-y>
- Dziallas, M., & Blind, K. (2019). Innovation indicators throughout the innovation process: An extensive literature analysis. *Technovation*, 80–81(May), 3–29. <https://doi.org/10.1016/j.technovation.2018.05.005>
- Fennell, D. A. (n.d.). What’s in a Name ? Conceptualizing Natural Resource-Based Tourism. <https://doi.org/10.1080/02508281.2000.11014903>
- Fennell, D. A. (2000). What’s in a name? Conceptualising natural resource-based tourism. *Tourism Recreation Research*, 25(1), 97–100. <https://doi.org/10.1080/02508281.2000.11014903>
- Fjeldstad, Ø. D., & Snow, C. C. (2018). Business models and organisation design. *Long Range Planning*, 51(1), 32–39. <https://doi.org/10.1016/j.lrp.2017.07.008>
- França, C. L., Broman, G., Robèrt, K. H., Basile, G., & Trygg, L. (2017). An approach to business model innovation and design for strategic sustainable development. *Journal of Cleaner Production*, 140, 155–166. <https://doi.org/10.1016/j.jclepro.2016.06.124>
- Fredman, P., & Tyrväinen, L. (2010). Frontiers in Nature-Based Tourism. *Scandinavian Journal of Hospitality & Tourism*, 10(3), 177–189. <https://doi.org/10.1080/15022250.2010.502365>
- Fredman, P., Wall-Reinius, S., & Grundén, A. (2012). The Nature of Nature in Nature-based Tourism. *Scandinavian Journal of Hospitality and Tourism*, 12(4), 289–309. <https://doi.org/10.1080/15022250.2012.752893>
- Gault, F. (2018). Defining and measuring innovation in all sectors of the economy. *Research Policy*, 47(3), 617–622. <https://doi.org/10.1016/j.respol.2018.01.007>
- Geissdoerfer, M., Bocken, N. M. P., & Hultink, E. J. (2016). Design thinking to enhance the sustainable business modelling process – A workshop based on a value mapping process. *Journal of Cleaner Production*, 135, 1218–1232. <https://doi.org/10.1016/j.jclepro.2016.07.020>
- Geissdoerfer, M., Savaget, P., Bocken, N. M. P., & Hultink, E. J. (2017). The Circular Economy – A New Sustainability Paradigm? *Journal of Cleaner Production*, 143, 757–768. <https://doi.org/10.1016/j.jclepro.2016.12.048>
- Geissdoerfer, M., Vladimirova, D., Fossen, K. Van, & Evans, S. (2018). Product, service, and business model innovation: A discussion. *Procedia Manufacturing*, 21, 165–172. Retrieved from <https://doi.org/10.1016/j.promfg.2018.02.107>

- Gómez-Baggethun, E., de Groot, R., Lomas, P. L., & Montes, C. (2010). The history of ecosystem services in economic theory and practice: From early notions to markets and payment schemes. *Ecological Economics*, 69(6), 1209–1218. <https://doi.org/10.1016/j.ecolecon.2009.11.007>
- Goodwin, H. (1996). In pursuit of ecotourism. *Biodiversity and Conservation*, 5(3), 277–291. <https://doi.org/10.1007/bf00051774>
- Hjalager, A. M. (2010). A review of innovation research in tourism. *Tourism Management*, 31(1), 1–12. <https://doi.org/10.1016/j.tourman.2009.08.012>
- Holling, C. . (1973). Resilience and Stability of Ecological Systems *Annual Review of Ecology and Systematics*, 4(1973), 1–23.
- Instituto da Conservação da Natureza e das Florestas (ICNF). (n.d.). Retrieved April 15, 2019, from <https://www.icnf.pt/turismodanatureza/tnenquradamentolegal>
- International Union for Conservation of Nature (IUCN). *Barometer of Life*. Retrieved May 6, 2020, from <https://www.iucnredlist.org>
- Jensen, Ø., & Prebensen, N. (2015). Innovation and Value Creation in Experience-based Tourism. *Scandinavian Journal of Hospitality and Tourism*, 15, 1–8. <https://doi.org/10.1080/15022250.2015.1066093>
- Kuzman, T., Bellos, S. K., & Đulić, K. (2019). Determinants of Innovation-based Sustainability in Transition and Developing Economies. *Economic Themes*, 56(3), 413–438. <https://doi.org/10.2478/ethemes-2018-0024>
- Laarman, J. and Durst, P. (1987). Nature travel in the tropics. *Journal of Forestry. Journal of Forestry*, 5, 43–46.
- Lane, B. (2017). Sustainable tourism: its evolution and its future. *Cuadernos Económicos de ICE*, (93). <https://doi.org/10.32796/cice.2017.93.6145>
- Lane, B. (2018). Will sustainable tourism research be sustainable in the future? An opinion piece. *Tourism Management Perspectives*, 25(December 2017), 161–164. <https://doi.org/10.1016/j.tmp.2017.12.001>
- Lankoski, L. (2016). Alternative conceptions of sustainability in a business context. *Journal of Cleaner Production*, 139, 847–857. <https://doi.org/10.1016/j.jclepro.2016.08.087>
- Liu, Z. (2003). Sustainable Tourism Development : A Critique Sustainable Tourism Development : <https://doi.org/10.1080/09669580308667216>
- Lüdeke-Freund, F., Carroux, S., Joyce, A., Massa, L., & Breuer, H. (2018). The sustainable business model pattern taxonomy—45 patterns to support sustainability-oriented business model innovation. *Sustainable Production and Consumption*, 15, 145–162. <https://doi.org/10.1016/j.spc.2018.06.004>

- Ludeke-Freund, F; Gold, S; Bocken, N. M. P. (2019). A Review and Typology of Circular Economy Business Model Patterns. *Journal of Industrial Ecology*, 23(1), 36–61. <https://doi.org/10.1111/jiec.12763>
- Magretta, J. (2002). Why business models matter. *Harvard Business Review*, 3–8.
- Massa, L., Tucci, C., & Afuah, A. (2014). Academy of Management Annals. A Critical Assessment of Business Model Research. *Academy of Management Annals*, 11(1), 73–104. <https://doi.org/10.5465/annals.2014.0072>
- Massa, L., Tucci, C. L., & Afuah, A. (2017). A critical assessment of business model research. *Academy of Management Annals*, 11(1), 73–104. <https://doi.org/10.5465/annals.2014.0072>
- Margaryan, L., & Fredman, P. (2017). Natural amenities and the regional distribution of nature-based tourism supply in Sweden. *Scandinavian Journal of Hospitality and Tourism*, 17(2), 145–159. <https://doi.org/10.1080/15022250.2016.1153430>
- Mehmetoglu, M. (2005). A case study of nature-based tourists: Specialists versus generalists. *Journal of Vacation Marketing*, 11(4), 357–369. <https://doi.org/10.1177/1356766705056634>
- Nybakk, E., & Hansen, E. (2008). Entrepreneurial attitude, innovation and performance among Norwegian nature-based tourism enterprises. *Forest Policy and Economics*, 10(7–8), 473–479. <https://doi.org/10.1016/j.forpol.2008.04.004>
- Nunkoo, R., Seetanah, B., & Agrawal, S. (2019). Guest editorial. *Tourism Review*, 74(2), 129–137. <https://doi.org/10.1108/TR-04-2019-209>
- Omerzel, D. G. (2016). A systematic review of research on innovation in hospitality and tourism. *International Journal of Contemporary Hospitality Management*, 28(3), 516–558. <https://doi.org/10.1108/IJCHM-10-2014-0510>
- Ortiz-Villajos, J. M., & Sotoca, S. (2018). Innovation and business survival: A long-term approach. *Research Policy*, 47(8), 1418–1436. <https://doi.org/10.1016/j.respol.2018.04.019>
- Pantea, A., Zaharie, M., & Osoian, C. (2016). The Innovation Process in an Emerging Country: A Qualitative Approach, 10(2), 1–5.
- Prange, C., & Schlegelmilch, B. B. (2016). Towards a balanced view of innovations. *Management Decision*, 54(2), 441–454. <https://doi.org/10.1108/MD-05-2015-0198>
- Rajapathirana, R. P. J., & Hui, Y. (2018). Relationship between innovation capability, innovation type, and firm performance. *Journal of Innovation and Knowledge*, 3(1), 44–55. <https://doi.org/10.1016/j.jik.2017.06.002>

- Reinhold, S., Beritelli, P., & Grünig, R. (2018). A business model typology for destination management organisations. *Tourism Review*, TR-03-2017-0065. <https://doi.org/10.1108/TR-03-2017-0065>
- Reinhold, S., Zach, F. J., & Krizaj, D. (2017). Business models in tourism: a review and research agenda. *Tourism Review*, 72(4), 462–482. <https://doi.org/10.1108/TR-05-2017-0094>
- Richardson, J. E. (2005). The Business Model: An Integrative Framework for Strategy Execution. *Strategic Change*, 17(5). <https://doi.org/10.2139/ssrn.932998>
- Ritter, T., & Lettl, C. (2018). The wider implications of business-model research. *Long Range Planning*, 51(1), 1–8. <https://doi.org/10.1016/j.lrp.2017.07.005>
- Saarinen, J. (2014). Critical sustainability: Setting the limits to growth and responsibility in tourism. *Sustainability (Switzerland)*, 6(1), 1–17. <https://doi.org/10.3390/su6010001>
- Schaltegger, S., Hansen, E. G., & Lüdeke-Freund, F. (2016). Business Models for Sustainability: Origins, Present Research, and Future Avenues. *Organization and Environment*, 29(1), 3–10. <https://doi.org/10.1177/1086026615599806>
- Schaltegger, S., Lüdeke-Freund, F., & Hansen, E. G. (2012). Business cases for sustainability: The role of business model innovation for corporate sustainability. *International Journal of Innovation and Sustainable Development*, 6(2), 95–119. <https://doi.org/10.1504/IJISD.2012.046944>
- Schneider & Clauss. (2019). Business Models for Sustainability : Choices and Consequences. *Organization & Environment*, (May). <https://doi.org/10.1177/1086026619854217>
- Shafer, S. M., Smith, H. J., & Linder, J. C. (2005). The power of business models. *Business Horizons*, 48(3), 199–207. <https://doi.org/10.1016/j.bushor.2004.10.014>
- Siddaway, A., Wood, A., & Hedges, L. (2019). How to Do a Systematic Review: A Best Practice Guide for Conducting and Reporting Narrative Reviews, Meta-Analyses, and Meta-Syntheses. *Annual Review of Psychology*, 70. <https://doi.org/10.1146/annurev-psych-010418-102803>
- Soleimani, S., Bruwer, J., Gross, M. J., Lee, R., Soleimani, S., Bruwer, J., ... Lee, R. (2019). Current Issues in Tourism Astro-tourism conceptualisation as special-interest tourism (SIT) field : a phenomenological approach. *Current Issues in Tourism*, 3500. <https://doi.org/10.1080/13683500.2018.1444021>
- Steven, R., Castley, J. G., & Buckley, R. (2013). Tourism Revenue as a Conservation Tool for Threatened Birds in Protected Areas. *PLoS ONE*, 8(5), 1–8. <https://doi.org/10.1371/journal.pone.0062598>

- Stubbs, W., & Cocklin, C. (2008). Conceptualising a “sustainability business model.” *Organization and Environment*, 21(2), 103–127. <https://doi.org/10.1177/1086026608318042>
- Teece, D. J. (2010). Business models, business strategy and innovation. *Long Range Planning*, 43(2–3), 172–194. <https://doi.org/10.1016/j.lrp.2009.07.003>
- Teece, D. J. (2018). Business models and dynamic capabilities. *Long Range Planning*, 51(1), 40–49. <https://doi.org/10.1016/j.lrp.2017.06.007>
- The nature Conservancy. (2020). *N4C_NaturePositiveRecovery*. <https://www.nature.org/en-us/>
- Tokmak, C., Dogantekin, A., & Kiliç, I. (2018). A Bibliometric Analysis on Sustainable Tourism Studies : A Review of 8 Years. *Turizm Akademik Dergisi*, 5(2018), 63–72.
- Torres-Delgado, A., & López Palomeque, F. (2012). The growth and spread of the concept of sustainable tourism: The contribution of institutional initiatives to tourism policy. *Tourism Management Perspectives*, 4, 1–10. <https://doi.org/10.1016/j.tmp.2012.05.001>
- Vargo, S. L., & Lusch, R. F. (2016). Institutions and axioms: An extension and update of service-dominant logic. *Journal of the Academy of Marketing Science*, 44, 1–19. Retrieved from http://shebei.blog.sdlogic.net/uploads/3/4/0/3/34033484/vargo_lusch_2016_jams.pdf
- Vos, R. O. (2007). Defining sustainability : a conceptual orientation, 339 (December 2006), 334–339. <https://doi.org/10.1002/jctb.1675>
- Whitehead, Alfred North (1920). *The Concept of Nature: Tarner Lectures*. Amherst, N.Y.: Cambridge University Press.
- Wirtz, B. W., Pistoia, A., Ullrich, S., & Göttel, V. (2016). Business Models: Origin, Development and Future Research Perspectives. *Long Range Planning*, 49(1), 36–54. <https://doi.org/10.1016/j.lrp.2015.04.001>
- World Tourism Organization. (1994). *Recommendations on Tourism Statistics*. United Nations, New York. https://unstats.un.org/unsd/publication/seriesm/seriesm_83e.pdf
- World Wildlife Fund. (2020). *Sustainability*. Retrieved May, 6, 2020, from <https://www.worldwildlife.org/topics/sustainability>
- Zott, C., & Amit, R. (2010). Business model design: An activity system perspective. *Long Range Planning*, 43(2–3), 216–226. <https://doi.org/10.1016/j.lrp.2009.07.004>

Chapter 2

Study I

Understanding sustainability and innovation in Nature-Based Tourism business models: A systematic literature review

Abstract

Innovation and the various dimensions of sustainability play an essential role in companies' competitiveness in general and tourism. Business models (BM) show how each company defines value creation, value sharing and competitive advantage. There has been no systematic research on the available literature on BM, innovation, sustainability, and the embodiment of these concepts into nature-based tourism (NBT). We undertook a systematic literature review on the relevance and role of BM, innovation, and sustainability in NBT to address this knowledge gap. After reviewing 77 conceptual and empirical articles, we detected that the literature on tourism and NBT is fragmented and that innovation, sustainability, and BM lack to be effectively considered in NBT. The systematic literature review helped us understand the relevance of introducing these literature streams into NBT research from the theoretical perspective. Further research and managerial implications are outlined, including the possibility of developing Innovative Sustainable Business Models (ISBM) for tourism and NBT and its relevance to NBT companies' competitiveness and quality improvement.

Keywords: Nature-Based Tourism, Innovation, Sustainable Tourism, Business Model, Competitiveness

1. Introduction

Nature and natural resources generally support tourism development. The role of nature in tourism is widespread. Nature-Based Tourism (NBT), companies exploit natural assets directly or indirectly (Fredman & Tyrväinen, 2010a). Contemporary lifestyles compel to acknowledge nature's value in business and incorporate nature assets by adopting new management initiatives, which may be determinant for companies and nature conservation (Fredman & Tyrväinen, 2010; Margaryan, 2016; Margaryan & Fredman, 2017). However, it is unclear how NBT companies use natural assets in their supply and how companies' initiatives introduce innovation, sustainability standards, and formal or informal business models (BM) (Biloslavo et al., 2018). In addition, it remains unclear how formal or informal BMs shape companies' performance, long-term business potential, and competitive advantage (Boons et al., 2013; Rajapathirana & Hui, 2018).

There is an understanding that the development of a business model (BM) for NBT is relevant to enhancing business performance (Teece, 2010; Boons & Lüdeke-Freund, 2013; Sahebalzamani & Bertella, 2018). Nevertheless, literature on BM is frequently unrelated to academic research, which is still unusual to find in specialised academic tourism publications. (Reinhold et al., 2017). BMs in tourism are recent (Reinhold et al., 2017). Research gaps exist on business sustainability and BMs in tourism publications (Biloslavo et al., 2018; Reinhold et al., 2017). Among these, Boons and Lüdeke-Freund (2013) suggested a research agenda on BMs connected with corporate sustainability or sustainable innovation. Innovation in BMs relates to a company's BM reshaping and is directly associated with knowledge and skills, frequently non-existent in small family and countryside companies (Omerzel, 2016). NBT companies often offer tailor-made experiences, and innovation may trigger radical changes (Jensen & Prebensen, 2015). A lack of research on BMs to be implemented in NBT and design-implementation on Innovative Sustainable Business Models (ISBMs) is evident (Geissdoerfer et al., 2018a). Innovation in NBT has not been the focus of investigations (Sahebalzamani & Bertella, 2018). Consequently, BM research in tourism should happen (Reinhold et al., 2017), allowing alternative management actions and innovation (Cosenz & Noto, 2018) to fulfil companies' strategic objectives (Teece, 2018).

There is also sparse literature on BMs for NBT, and the concept of BMs in NBT is understood and used in a relatively limited way and adopts a very static perspective (Sahebalzamani & Bertella, 2018). This prompted Geissdoerfer et al. (2018a) to highlight BMs for NBT and the design implementation of ISBMs as an emergent field of research. The reduced number of theoretically oriented research studies on NBT (Fredman & Tyrväinen, 2010) may also explain the lack of studies on ISBMs for NBT. The innovation should not be understood as a panacea for all the fragilities and needs of tourism; however, the introduction of innovation in BMs for NBT and tourism, in general, can be relevant to reduce obsolete practices and improve business competitiveness and business performance in the long term (Breuer et al., 2018; Geissdoerfer et al., 2016; Lüdeke-Freund et al., 2018; Biloslavo et al., 2018; Täuscher & Abdelkafi, 2018). Following Siddaway et al. (2019), two research questions were formulated:

RQ 1: To what extent does Sustainability in NBT BMs contribute to long-term business?

RQ 2: How do NBT companies incorporate innovation and sustainability in their BMs to achieve competitive advantage?

The formulation of the research questions allowed for the objectives of this study to be established. The first aim of this study is to conduct a literature review of the research published on business models for tourism and nature-based tourism. The study's second aim is to identify, evaluate, and synthesise research on business models for nature-based tourism. The third aim is to provide a discussion on the research themes and trends. The fourth objective of the study is to yield an understanding, based on the studies considered, of how business models in nature-based tourism companies are changing to incorporate innovation and sustainability. Finally, the study aims to stimulate a debate on innovative sustainable business models and their impacts on long-term business performance and competitiveness in nature-based tourism companies.

Furthermore, the study proposes definitions of NBT and ISBMs and conveys our understanding of sustainability. This study contributes to the literature on BMs for NBT companies by presenting an understanding of the evolution of innovation and sustainability in BMs for NBT and suggests avenues for future research.

After establishing the topics' significance and identifying the literature gaps identified in Section 1, Section 2 presents the concepts under study, and Section 3 describes the methodological approach employed. Section 4 presents our findings with a descriptive analysis of the papers included, and Section 5 outlines a literature review of the fundamental research topics. Section 6 provides a discussion and conclusions. After that, Section 7 presents the

contributions of this review. Finally, Section 8 points out research implications, limitations, and directions for further research.

2. Literature Background

2.1. Nature-Based Tourism

Ducarme and Couvet (2020) consider ‘nature’ more complex and abstract than it seems, suggesting a ‘wise use’ of the concept, complemented by other scientific concepts such as ‘biodiversity’, ‘evolution’, ‘ecosystem’, ‘landscape’, ‘wildness’, ‘population’, and ‘community’ among others. From a servicescape perspective, nature has a wide range of functions, and its influence on customers and employees is considered an internal response to environmental effects (Bitner, 1992). From an economic point of view, nature is a service provider where ecosystem functions are classified as services with a monetary value, quickly adopted by governments and financial sectors since 1970 (Gómez-Baggethun et al., 2010). In NBT, nature merges the two previous assumptions, where nature remains the main stage of operations as a servicescape and a product commercialised by suppliers and consumed and experienced by tourists (Fredman et al., 2012).

NBT constitutes a complex area of research, and the relevant literature provides several definitions of NBT (Laarman & Durst, 1987; Lang & O’Leary, 1997; Goodwin, 1996; Fennell, 2000). NBT includes all forms of tourism based on natural resources, wildness, landscape, and biodiversity to promote environmental conservation and improve local welfare (Goodwin, 1996; Fennell, 2000; Lundmark & Müller, 2010). Goodwin (1996) and Fennell (2000) emphasise that NBT and ecotourism overlap. Laarman and Durst (1987) refer to nature tourism as ‘nature travel’ or ‘nature-oriented tourism’, introducing the definition’s educational, recreational, and adventure aspects. The previous reports express two contradictory perspectives on NBT. The first focuses on NBT as non-intrusive tourism associated with nature conservation, whereas the second considers NBT as dynamic tourism using natural resources for different purposes. Moreover, Lang and O’Leary (1997) define NBT as tourists’ travels to natural areas or destinations. Additionally, Fennell (2000) designated NBT as Natural Resource-Based Tourism or Natural Resource Tourism, which is described as ‘Responsible travel to natural areas that conserves the environment and improves the welfare of local people’ (p.97).

NBT may also be consumptive tourism, such as hunting (Fennell, 2000). Mehmetoglu (2005) proposed an NBT segmentation into categories according to outdoor activities. Some scholars focus on NBT's relevance for conservation and nature interests (Fennell, 2000; Lundmark & Müller, 2010). NBT is also considered a regional development booster (Margaryan & Fredman, 2017) based on sites' unique characteristics, exclusive experiences, and NBT products (Soleimani et al., 2019).

We highlight the absence of a consensual definition of NBT, which compromises the acceptance of NBT as an identifiable economic sector and makes it difficult to measure the economic impacts (Fredman & Tyrväinen, 2010). Notwithstanding, NBT contributes significantly to nature conservation (Goodwin, 1996; Steven et al., 2013). NBT occurs in relatively whole and undeveloped natural areas outside one's home environment (Fennel, 2000; Saarinen, 2014). This perspective prompted researchers to expand the NBT concept beyond a conservationist and environmentalist vision, introducing tourists' activities in the NBT definition (Tyrväinen et al., 2001; Fredman & Tyrväinen, 2010). Fredman et al. (2009) define NBT as a broad concept: "Nature-based tourism is human activities occurring when visiting nature areas outside the person's ordinary neighbourhood" (as cited in Fredman & Tyrväinen, 2010, p.181). Fredman and Tyrväinen (2010) consider different sub-categories of tourists' activities according to the purpose and context of tourists' visits. Tourists' activities occur in relatively unmodified, undeveloped natural areas outside one's home (Fennel, 2000; Saarinen, 2014). Therefore, Fossgard and Fredman (2019) consider the NBT to have a minimalist character. The vast diversity of approaches towards NBT can be the reason for the non-existence of a standard definition of NBT, whereby the above-mentioned definitions underline nature conservation and environmental conscientiousness (Fredman & Tyrväinen, 2010). NBT is a way to promote regional development and rural-based economy diversification (Margaryan & Fredman, 2017). Natural resources significantly support and provide raw materials for human activities, and managing nature implies ecosystem services conservation (Karp et al., 2015). Ecosystem services and nature conservation, managed effectively, efficiently, and equitably through market-based instruments, contribute to business competitiveness (Bishop et al., 2009).

NBT is frequently associated with Sustainable Tourism (ST). Nevertheless, few NBT articles address sustainability and ecosystem services management (Reinhold et al., 2017). Well-preserved spots positively impact NBT destination attractiveness (Chung et al., 2018). Reconciling tourist activities with the basic principles of sustainability should be seen

as a fundamental requirement of NBT companies and a differentiation asset contributing to enhancing competitive advantage in NBT.

2.2. Sustainable Tourism

Agenda 21 for the Travel and Tourism Industry introduced the concept of sustainable development in tourism (Hardy et al., 2002). In 1993, the World Tourism Organisation (UNWTO) defined Sustainable Tourism (ST) as promoting economic growth and preserving the environment and heritage with positive repercussions for host communities, visitors, and tourism. Bramwell and Lane (1993) articulated ST as “a positive approach intended to reduce the tensions and friction created by the complex interactions between the tourism industry, visitors, the environment, and the communities which are host to holidaymakers” (as cited in Boluk et al., 2019, p.848). A flexible interpretation of the concept of sustainable development by politicians, decision-makers, and public and private institutions prompts different perspectives, such as an Anthropocentric and Utilitarian view, an Ecosystem and Bioethical perspective, considering continuous economic growth (Hunter, 1997). The absence of indicators compromised the term ‘sustainable’ (Butler, 1999). Therefore, a limited set of universal, unambiguous indicators (Agyeiwaah et al., 2017) focusing on environmental, social, and economic performance are vital to monitoring and assessing ST (Lu & Nepal, 2009; Kristjánsdóttir et al., 2017). ST widely considers environmental and economic dimensions, but communities are not always involved in it (Hardy et al., 2002). The lack of involvement of local communities led to the implementation of new sustainable development strategies and sustainability monitoring tools (Moscardo, 2008). Several authors defend the adoption of ST as a multi-dimensional concept (Liu, 2003; Lane, 2018; Tokmak et al., 2018). The last two decades have significantly evolved ST (Buckley, 2012). The first decade was the adoption of the economic, environmental, and social dimensions of sustainability (Buckley, 2012). In contrast, the second decade was dedicated to the evolution of the ST concept (Buckley, 2012), associated with efficient partnerships and networks (Albrecht, 2013). Other authors have also considered introducing the principle of subsidiarity in tourism (Higgins-Desbiolles, 2018). The introduction of a holistic approach provided meaning and value to ST and led to the

understanding that sustainability should be the pillar of tourism (Clarke, 1997; Lu & Nepal, 2009; Torres-Delgado & López Palomeque, 2012).

ST research in testing and applying theory by conducting empirical research brings relevant contributions (Ruhanen et al., 2015). Scholars stress the need to serve society and academia better, seeking “clearer connections to the challenges identified by the United Nations Sustainable Development Goals (UN_SDG), the Paris Agreement and other global initiatives” (Bramwell et al., 2017, p. 6-7). Tourism and sustainable development should be connected, reframing research and teaching, according to the UN_SDG (Scheyvens, 2018), and introducing critical thinking in tourism (Boluk et al., 2019). A broader vision should be adopted by companies, which will involve engaging in long-term planning to boost economic benefits, local well-being, environment protection, and tourist experiences (Zolfani et al., 2015; Connell, 2018). Cucculelli and Goffi (2016), Connell (2018), and Nunkoo et al. (2019) mention the combination of population empowerment, destinations’ competitiveness improvement, and innovation in ST. Efforts to minimise adverse environmental perceptions of tourism are still lacking through introducing innovative products and services, applying innovative destination management practices (Lane, 2017), and integrating sustainable communication and procedures for responsible behaviour (Tölkes, 2018).

2.3. Innovation

At the beginning of the XX century, critical discussions on innovation emerged in economic publications. Innovation represents a key asset in tourism in hospitality and tourism companies, contributing to tourism growth and long-term business survival (Pikkemaat et al., 2019) by doing things differently, achieving better results, and improving performance (Rajapathirana & Hui, 2018). However, there is still limited research on tourism innovation and its impacts on destinations and national economies (Hjalager, 2010).

Innovation has become common in companies, research units, universities, and organisations (Kahn, 2018). The definition of innovation highlights doing something different or new, introducing innovative culture and external knowledge in organisations, and transforming new ideas into successful innovations (Rajapathirana & Hui, 2018). Other definitions mention the “implementation of a new or significantly changed product or process” (Gault, 2018, p.619) or

“the development process and the introduction of new goods or services” (Kuzman et al., 2019, p.420). To summarise, innovation must consider three common elements: creativity, a problem-solving approach, and a new way of thinking, meaning that innovation introduces an alternative viewpoint (Moscardo, 2008).

In tourism, there is scarce innovation related to product, process development, and technology adoption (Camisón & Monfort-Mir, 2012; Kahn, 2018). Most existing tourism companies, such as NBT companies, are small (Rønningen, 2010), revealing a lack of knowledge and technological skills (Souto, 2015; Omerzel, 2016; Hossain, 2017). In general, a lack of appropriate skills and adequate education on innovation remains among tourism entrepreneurs (Moscardo, 2008; Rønningen, 2010). Thus, universities and other institutions are fundamental to enhancing tourism innovation (Hjalager, 2010; Gardiner & Scott, 2018; Dziallas & Blind, 2019).

In tourism, transformational leadership in hotels contributes to creativity, learning, and internal changes (Vuković et al., 2018), where top experienced management positively influences product innovation (Kuzman et al., 2019). Williams and Shaw (2011) characterised tourism internationalisation as innovation, emphasising that internationalisation per se is not innovation and requires high-level knowledge. Williams and Shaw (2011) also acknowledge that customers can act as co-creators of innovation. International tourism may employ new processes or imitate existing ones to increase economic growth, productivity, and employment (Hjalager, 2015). Zach and Hill (2017) mention that networking, collaboration, knowledge sharing, and trust are relevant to the innovation of tourism destinations. Dziallas and Blind (2019) suggest the introduction of indicators and measuring tools for innovation assessment. In NBT, innovation is not particularly investigated (Sahebalzamani & Bertella, 2018), and this knowledge gap presents a research opportunity with benefits for both researchers and businesses.

Policy uncertainty negatively affects a country’s innovation quantity, quality, and originality, compromising long-term business sustainability and profits (Bhattacharya et al., 2017). It is up to managers and business owners to introduce the best practices according to the objectives and goals defined by each company. Innovation assumes a leading role for companies and is a common feature in all sectors of activity, including innovative BMs (BMIs).

2.4. Business Models

Biloslavo et al. (2018) describe business models as interdisciplinary instruments promoting a holistic view of business, where nature, societies, and the economy are considered. BMs are significant in describing an organisation and its functioning, explicitly or implicitly, where conceptualisations of BM tend to differ according to organisations' characteristics and are associated with the epistemological perspectives and methodological approaches of BM researchers (Teece, 2010; Chesbrough, 2010; Ritter & Lettl, 2018; Cosenz & Noto, 2018; Baden-Fuller & Morgan, 2010; Zott & Amit, 2010; Wirtz et al., 2016; Shafer et al., 2005; Massa et al., 2014; Teece, 2018; Biloslavo et al., 2018; Foss & Saebi, 2018; Fjeldstad & Snow, 2018). Despite the high quantity of literature on BMs, many unsolved problems remain (Wirtz et al., 2016; Foss & Saebi, 2018), and a general definition of BMs was not found (Cosenz & Noto, 2018; Ritter & Lettl, 2018). Scholars tend to define BMs from different perspectives, such as a tool joining all business elements (Magretta, 2002; Schneider & Clauss, 2019), a strategy (Richardson, 2005), an activity system providing value creation, value share, and competitive advantage (Zott and Amit, 2010; Wirtz et al., 2016); or as "how the enterprise delivers value to customers, entices customers to pay for value, and convert those payments to profit" (Teece 2010, Teece, 2018).

It can be found in the use of BMs and strategy concepts in an interchangeable way (Shafer et al., 2005), where BMs are considered a tool that joins all business elements (Magretta, 2002; Schneider & Clauss, 2019), explaining how activities and companies' strategies are lined up (Richardson, 2005). Considering BMs as a tool, the perceptions of value proposition, market segment, value chain structure, revenue mechanisms, cost and profit estimation, competitive strategy, and innovation are embedded (Teece, 2010; Chesbrough, 2010; Ritter & Lettl, 2018; Cosenz & Noto, 2018). According to companies, BMs can play different roles and purposes, except scientific models or scales (Baden-Fuller & Morgan, 2010). BMs are interpreted in multifaceted ways; they can be copied, such as model organisms (as in biology), represent classes of things, and be manipulated like economic models (Baden-Fuller & Morgan, 2010). Teece (2010) emphasises that implementing a BM may involve elements that are hard to replicate. Magretta (2002), Massa et al. (2014), and Ranjith (2016) underline the significance

of efficient BMs for competitive advantage improvement. A BM can also be interpreted as an activity system, providing value creation, value share, and competitive advantage (Zott & Amit, 2010; Wirtz et al., 2016). Baden-Fuller and Haefliger (2013) provide a service ecosystems perspective in BM, which introduces a shift from company-centric production of outputs to activities and processes. Wieland et al. (2017) include BMs' economic and social resources and their role in service exchange. In tourism, BMs should attract customers, their needs, and their satisfaction, providing economic outcomes, knowledge, innovative practices, and promoting customers' behaviour transition (Boons & Lüdeke-Freund, 2013). Martins et al. (2015) give a different design perspective on IBMs, drawing on cognitive psychology research. The previous authors proposed novelty, analogical reasoning, and conceptual combination, emphasising combining a modifier concept and the existing BMs. Recent research on BMs detaches BMs from the technological era and engages with the generation of sustainability (Biloslavo et al., 2018). Boons and Lüdeke-Freund (2013) proposed imposing exemplar normative requirements through ISBMs.

A BM represents “a representation of a company underlying core logic and strategic choices for creating and capturing value within a value network” (Shafer et al., 2005, p.202). Summing up, “a BM is a description of an organisation and how that organisation functions in achieving its goals (e.g. profitability, growth, social impact, ...)” (Massa et al., 2014, p. 2) or as “how the enterprise delivers value to customers, entices customers to pay for value, and convert those payments to profit” (Teece, 2010, p.173).

BMs are present in companies either explicitly or implicitly and can assume distinct perspectives, such as integrating analogical reasoning and conceptual combination, corporate sustainability, or sustainable innovation (Biloslavo et al., 2018). Many unsolved questions remain in the BM literature (Wirtz et al., 2016; Foss & Saebi, 2018), such as a general definition of BMs (Cosenz & Noto, 2018; Ritter & Lettl, 2018), which would guide efforts to enhance strategies, decision-making, and companies' performance (Fjeldstad & Snow, 2018). Scholars also view BMs as interdisciplinary instruments, in line with the United Nations (UN) global challenges and sustainability agenda, including nature, economy, and society (Biloslavo et al., 2018), aiming to develop flexible business models such as BM Canvas (Sahebalzamani & Bertella, 2018). BM research in tourism can be advanced (Reinhold et al., 2017) by executing alternative management actions and innovation (Cosenz & Noto, 2018) to fulfil companies' strategic objectives (Teece, 2018). Foss and Saebi (2017) considered IBMs as “designed, novel,

and nontrivial changes to the key elements of a company's BM and the architecture linking these elements" (p. 216). Additionally, Schaltegger et al. (2012) and França et al. (2017) argued that an IBM requires interrelating sustainability dimensions and new ways to create and deliver value. Yang et al. (2017) supported introducing a sustainable strategic design to identify the company's uncaptured values. Gjerding and Kringelum (2019) described an IBM "as a process by which companies balance exploration through the context of the value network" (p.47). Heikkilä et al. (2018) discussed IBMs in association with the company's strategic goals and the existent BM. Tidd and Bessant (2018) and Andreassen et al. (2018) took a system perspective on IBM to demonstrate how companies create, deliver, and capture value. Innovation in BMs is no longer focused exclusively on the product or the innovation process, with ISBMs being a new area of interest (Geissdoerfer et al., 2017). Besides, NBT relies on nature and local communities; therefore, exploring new BMs in NBT is relevant to understanding how the NBT BMs should evolve to enhance sustainability (Sahebalzamani & Bertella, 2018). Furthermore, this aligns with new business practices and customer choice improvement (Reinhold et al., 2017a).

3. Methodology

A systematic literature review aims to understand the subject's complexity, connect past and recent research, and collect relevant scientific data to support the development of new knowledge and future studies (Furunes, 2019). A systematic literature review was deemed to be an appropriate methodology for the current research as it provides (a) the use of explicit and transparent methods; (b) a piece of research and follows a step-by-step process of literature search, collection, and analysis; (c) credible, replicable, scientific, and transparent data that can be updated; and (d) relevant, helpful research that is easily understood by all parties concerned (Bryman, 2012; Siddaway et al., 2019). For the systematic literature review, we followed the four steps proposed by Bryman (2012): (1) define the purpose of the review; (2) seek out studies relevant to the scope and purpose of the review; (3) appraise the studies identified in step two, and (4) analyse each study and synthesise the results. Search terms were defined to find relevant articles addressing the topics of this review (Siddaway et al., 2019).

Considering the aims of this study, a database search in ProQuest, Taylor & Francis, Scopus, Web of Science, and Emerald was initially conducted on BMs for NBT, innovation, ST, and

NBT. A limited number of studies discussing BMs in NBT were noticed. Therefore, we decided to expand our search to BMs in tourism in general, Innovation, ST, and NBT. The search strings used to scan article titles, abstracts, and keywords were as follows: 'innovation', 'NBT', 'innovation' AND 'NBT', 'sustainable tourism', 'sustainable tourism' AND 'NBT', 'business models', 'sustainable business models', 'innovation' AND 'business model', 'sustainable tourism' AND 'business models', 'sustainable business models' AND 'innovation', 'sustainable business models' AND 'NBT' AND 'innovation'.

As some strings, such as sustainable tourism, business model, and innovation, returned more than 10,000 results each on the Scopus, Taylor & Francis, and the Web of Science databases, it was established considering only the 300 most cited articles for the search. Downloads included articles mentioning at least two search words in the title, abstract, and keywords. We implemented all the actions to ensure that only relevant articles were integrated into a systematic review (Bryman, 2012). After removing duplicate articles, a first-step process consisted of double-checking titles, abstracts, and keywords by two reviewers. Initially, articles were organised chronologically, from the oldest to the most recent, providing a sense of the evolutionary perception of the subjects under analysis. Then, the second step was a double full-text screening of the articles selected for inclusion after the title and abstract screening. We made all efforts to avoid personal bias by implementing discussions and final selection was performed. Each step entailed the application of inclusion criteria for the selected articles:

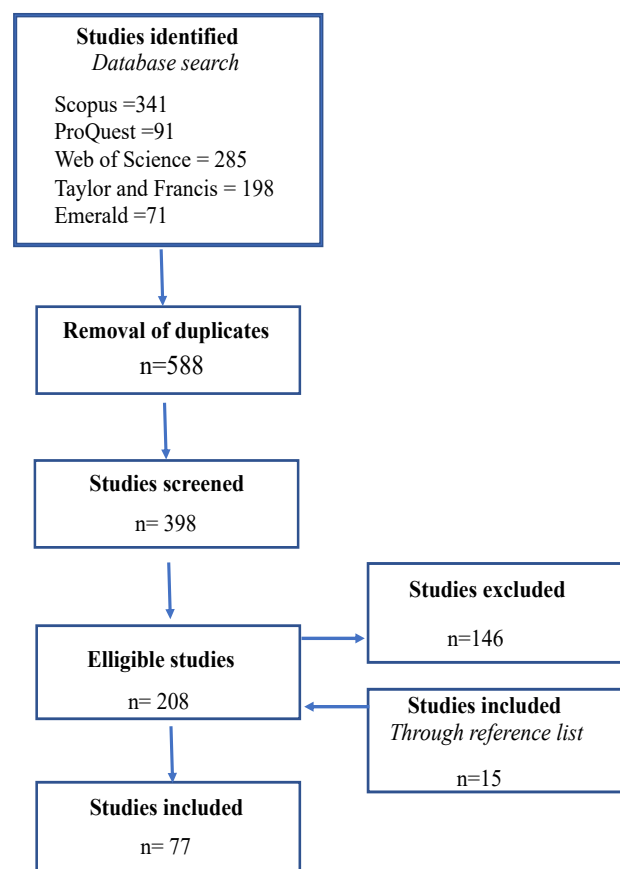
1. The study focused on BMs for NBT
2. The study focused on BMs for Tourism
3. The study focused on a sustainable business model
4. The study focused on sustainable business model innovation
5. The study focused on sustainable business model innovation in tourism/NBT

This procedure reduced the sample to 62 articles. A thorough search of the reference list of relevant studies was conducted, including 15 more articles. The final sample contains 77 articles for further analysis, as illustrated in Figure 1. The final sample included BMs, NBT, innovation, and ST articles. The last step was summarising all the analysed literature and answering the research questions. The literature search included conceptual and empirical articles, literature reviews, qualitative, quantitative, and mixed-methods articles in English. This study excludes book chapters, executive summaries, conference papers, and viewpoints.

The literature search took place between October 2019 and January 2023 and extended to articles published from 2002 until 2023.

There is no consensus on assessing the quality of articles (Siddaway et al., 2019). Therefore, the study assessment considered several aspects, such as the appropriateness of the study design for addressing the research objectives, quality of reporting, research question, objectives, and year. A quantitative assessment of the selected articles provided a systematic overview of the published research, including geographic and time-related studies and the various methods. The quantitative description of the selected articles reveals BM conceptualisation in business, tourism, and NBT. It sums up the relevance of BMs in companies' long-term business potential and competitive advantage. The information was analysed, interpreted, and synthesised, providing theoretical contributions and other research directions (Siddaway et al., 2019).

Figure 2.1. Systematic literature review summary process (Adapted from Maxim & Morrison, 2022)



4. Quantitative descriptive analysis of the selected articles

Annexe I summarise the articles selected chronologically, identifying three analysis levels: Business, Tourism, and NBT. Moreover, Annex I include the authors' names, publication year, country of publication, research topics, framework, research strategy, and the main findings of each article. In the column 'Level of Analysis', 59 articles explore BM in several sectors of economic activity, discussing BM conceptualisation, the utility of BM, sustainability in BM, innovation in BM, and business competitiveness and performance. The same column includes 11 articles on tourism and eight on NBT, exploring innovation on BM in tourism to generate competitive advantages, resilience, and ST. Articles were predominantly published in the UK (39 articles), followed by the Netherlands (21 articles), the USA (10 articles), Switzerland (4 articles), Denmark (2 articles), and Singapore (1 article). All the NBT articles address rural tourism, which includes activities and services in nature. Annex I also show that the consulted articles on tourism and NBT have all been published in European countries since 2008. Moreover, the USA articles included in this study predominantly discuss BM from a conceptual point of view, encompassing innovation and sustainability as relevant assets to companies' competitiveness.

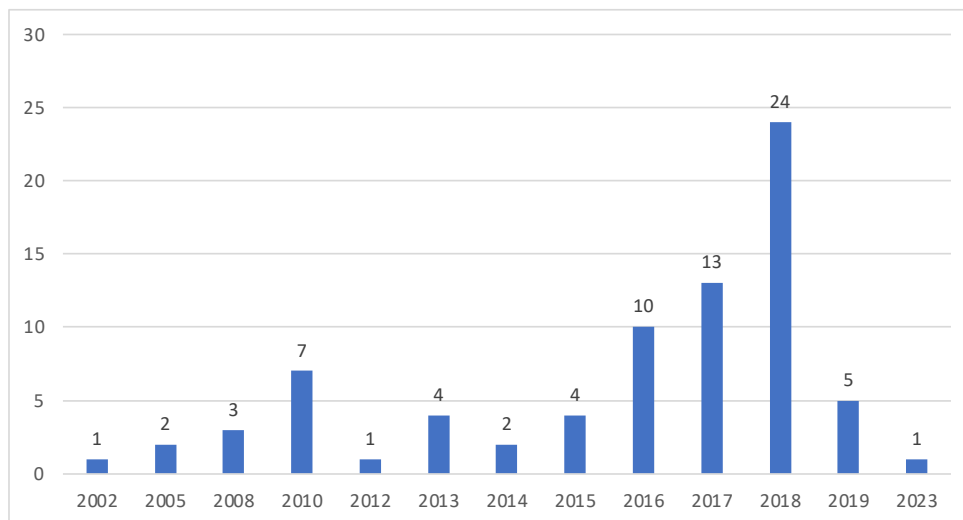
The research strategy involved classifying the selected literature as quantitative, qualitative, and mixed-methods, as evidenced in Table 1. The majority of articles $n=67$ (87.0%) undertook a qualitative approach, whereas the remaining articles were divided into quantitative approach $n=3$ (3.9%) and mixed-methods $n=7$ (9.1%). Several qualitative articles integrate multiple data sources, combining literature, observations, and interviews. The seven articles categorised as mixed-methods employed questionnaires, surveys, and interviews. It is noticeable that the quantitative method is not relevant to the articles researched.

1 Table 2.1. Articles per methodological approach (Author's elaboration)

<i>Methods</i>	<i>Total Articles</i>	<i>Percentage breakdown</i>
<i>Quantitative</i>	3	3.9%
<i>Qualitative</i>	67	87.0%
<i>Mixed Method approach</i>	7	9.1%

The results summarise articles and journals on BM, Innovation, ST, and NBT in the last 21 years. The final sample includes about 40% of articles published between 2008 and 2019, as evidenced in Figure 2. Nonetheless, the number of publications soared between 2016 and 2019. This reflects that BM in tourism and NBT is a recent field of research and that the adoption of BM in the context of tourism and NBT is in its first steps. Our findings are consistent with the results obtained by He and Ortiz (2021) when using the keywords ‘sustainable business model’ and ‘sustainable business model innovation’ in their research.

Figure 2.2. Total of articles per year (Author’s elaboration)



Our research identified 77 articles published in 42 scientific journals, with 10 journals containing most papers. Figure 3 presents journals with two or more reviewed articles. *Journal of Cleaner Production* includes 14 (18.2%) articles, followed by *Long Range Planning* with 11 (14.3%) articles. The *Scandinavian Journal of Hospitality and Tourism* comprises 4 (5.2%) articles, and *Tourism Management* and *Sustainability* contributes 3 (3.9%) articles. Five journals include two articles each. The ten remaining journals contribute to one article each. Additionally, the *Journal of Cleaner Production* and *Long Range Planning* contain 25 (32.5%) of the analysed articles.

Figure 2.3. Journals with two or more articles (Author's elaboration)

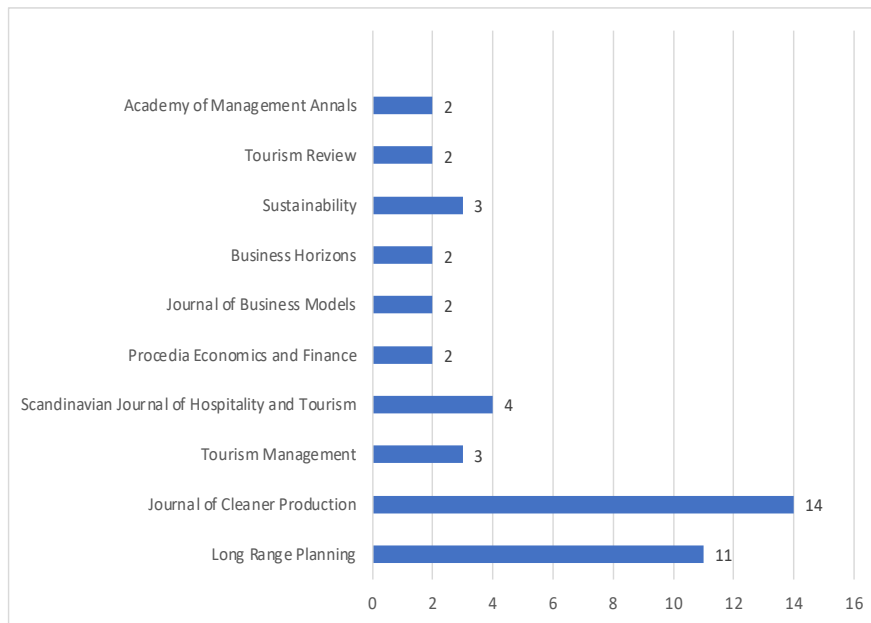


Figure 4 summarises the main research themes addressed. Business Model Innovation (BMI) is the central researched theme with 19 articles (24.8%), followed by BM with 17 articles (22.1%), SBM with 16 articles (20.8%), Innovation 10 articles (13%), ISBM 9 articles (11.7%) and NBT with six articles (7.8%).

Figure 2.4. Articles per researched themes (Author's elaboration)

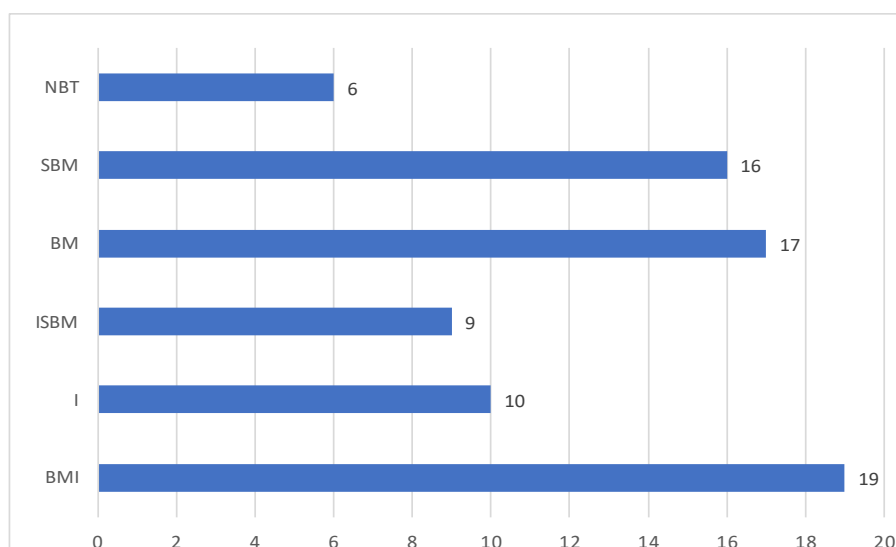
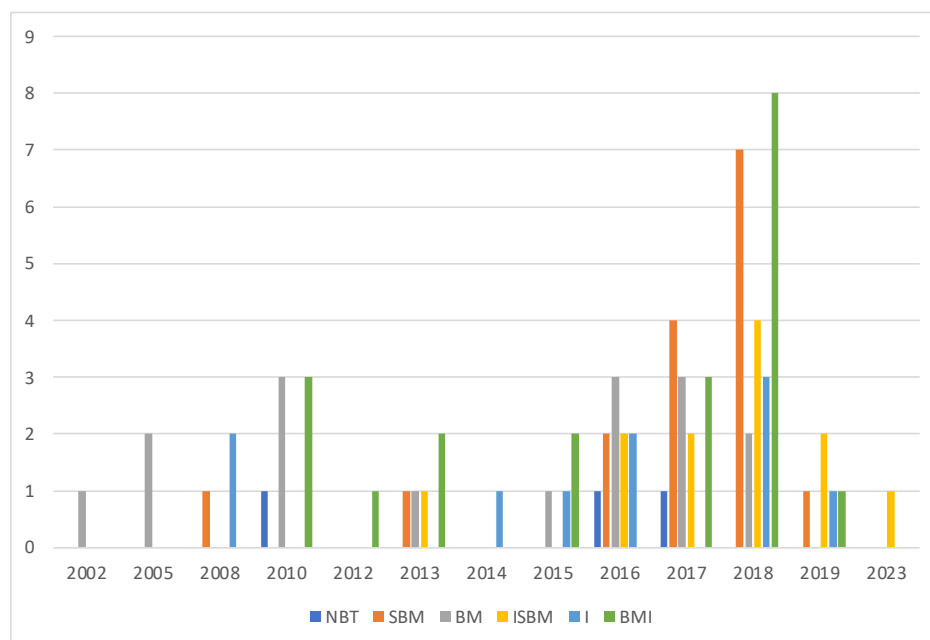


Figure 5 illustrates the annual variation of the researched themes. Target themes since 2002 were analysed, and significant growth was revealed, particularly between 2016 and 2019. Accordingly, the theme BM was identified in articles since 2002, NBT, Innovation, and SBM from 2008, IBM from 2010, and ISBM from 2013 until 2023. The concept of sustainable development in tourism was introduced long after the 1992 Earth Summit. Therefore, including sustainability principles in tourism took some time, and the selected literature encompasses articles on SBM and Innovation since 2008, evidencing a possible association with the evolution of digital technology. IBM and SBM were the most researched themes in 2018.

Figure 2.5. Articles per researched theme and year (Author's elaboration)



5. Understanding sustainability and innovation in NBT BMs

In this section, we discuss how innovation and sustainability in the NBT context may contribute positively in two ways: (1) enhancing NBT resilience and long-term business, and (2) innovation and sustainability in NBT BMs for competitive business advantage.

5.1. Sustainability in NBT Business Models: long-term business

A flexible interpretation of the concept of sustainable development by politicians, decision-makers, and public and private institutions prompts different perspectives, such as an Anthropocentric and Utilitarian view and an Ecosystem and Bioethical perspective, acknowledging continuous economic growth (Hunter, 1997). As part of Agenda 21 for the Travel and Tourism Industry, the concept of sustainable development was extended to tourism (Hardy et al., 2002). In 1997, the ST concept emerged after the Rio Summit in 1992. Tourism growth in the last decade introduced new challenges (World Tourism Organization, 2017), leading tourism companies to develop sustainable and innovative offers and sustainable commitment enhancement (environmental, social, and economic) (Stubbs & Cocklin, 2008). Sustainability in business induces chief executive officers to adopt a stakeholder position with employees, customers, local communities, suppliers, and partners (Stubbs & Cocklin, 2008). Companies should comply with legal regulations, meaning legislation must fulfil sustainable requisites. However, sustainability goes beyond legal issues and requires a broad conceptual vision. Introducing sustainability in an NBT BM denotes the intention to embrace innovation, which requires suiting previous BMs (Schaltegger et al., 2012). In line with this thinking, NBT SBM should integrate sustainable value proposition, innovation, and competitive advantage (Chesbrough, 2010; Boons & Lüdeke-Freund, 2013; Breuer et al., 2018), helping to simplify business elements and their interrelations (Geissdoerfer et al., 2016; Lüdeke-Freund et al., 2018). This is reinforced through the first attempt to connect BMs to already established concepts, such as corporate sustainability or sustainable innovation (Boons and Lüdeke-Freund, 2013).

Integrating new BMs in NBT forces customers, suppliers, and top management to adopt a sustainable commitment subject to profit uncertainty (Lahti et al., 2018). Moreover, NBT companies' sustainable value and reliability based on an SBM should satisfy customers' sustainable suggestions (Schneider & Clauss, 2019). Nevertheless, several innovative BMs tend to fail, and the reasons for failure are unclear (Geissdoerfer et al., 2018b). An SBM is dynamic (Rauter et al., 2017) and integrates sustainable business strategies, including environmental, economic, and social challenges (Evans et al., 2017). Therefore, including environmental, economic, and social dimensions in NBT is vital in companies' SBM (Joyce & Paquin, 2016; Biloslavo et al., 2018). Thus, an NBT SBM should be ecologically robust and economically sustainable (Täuscher & Abdelkafi, 2018). Notwithstanding, no specific design for an SBM

(Täuscher & Abdelkafi, 2018) and no implementation guidelines were found (Geissdoerfer et al., 2017a). SBMs and circular business models are familiar in the literature from a conceptual point of view (Bocken et al., 2016; Ludeke-Freund, Gold & Bocken, 2019). Besides, the mixed-method approach contributes to knowledge advancement and SBM understanding (Dentchev et al., 2018). Nevertheless, we noticed a lack of literature mentioning the practical application of SBMs in NBT. It was also explicit in the literature that NBT companies coupling NBT ISBMs with the circular economy model can reduce risk, minimise resource use (Bocken et al., 2018), enhance competitive advantage and long-term business, and shift from efficiency to resilience (Pieroni et al., 2019).

Table 2.2. Literature Discussing Sustainability in Business Models (Author's elaboration)

Sustainability in Business Models: the long-term business

<i>Sustainability as company's driving force and decision-making.</i>	Stubbs and Cocklin (2008)
<i>SBM as innovative and strategic competitive advantage</i>	Schaltegger et al. (2012); Chesbrough (2010); Boons and Lüdeke-Freund (2013); Boons et al. (2013); Tiemann et al. (2018); Geissdoerfer et al. (2016); Lüdeke-Freund et al. (2018)
<i>SBM dynamic, integrating the three pillars of sustainability (social, environmental and economic)</i>	Rauter et al. (2017); Evans et al. (2017); Joyce & Paquin (2016); Biloslavo et al. (2018); Täuscher & Abdelkafi (2018)
<i>SBM and sustainable commitment</i>	Lahti et al. (2018); Geissdoerfer et al. (2018); Schneider and Clauss (2019)
<i>SBM and circular economy enhancing resilience and Business performance in NBT</i>	Teece (2010); Boons and Lüdeke-Freund (2013); Bocken et al. (2016); Bocken et al. (2018); Sahebalzamani and Bertella (2018); Lüdeke-Freund et al. (2019); Pieroni et al. (2019); Geissdoerfer, Pelzeter, & Santa-maria, (2023)
<i>Lack of appropriate design for SBM</i>	Täuscher and Abdelkafi (2018); Geissdoerfer, Savaget, Bocken, & Hultink (2017); Geissdoerfer et al. (2018); Dentchev et al. (2018)
<i>Gap in literature on business sustainability in tourism and on BM for NBT</i>	Biloslavo et al. (2018); Sahebalzamani and Bertella (2018); Reinhold et al. (2017); Dentchev et al. (2018)

Based on this analysis, we can assume that sustainability in NBT ISBM contributes positively to resilient and long-term business (Teece, 2010; Boons & Lüdeke-Freund, 2013; Espiner et al., 2017; Sahebalzamani & Bertella, 2018). Moreover, the sustainability approach reduces

literature dispersion and moves towards innovative research (Biloslavo et al., 2018; Sahebalzamani & Bertella, 2018).

5.2. Innovation in NBT BMs: competitive advantage

A resulting literature overview shows limited research on tourism innovation and its impacts on destinations and national economies (Hjalager, 2010; Jensen & Prebensen, 2015). Innovation involves creativity, problem-solving, a new way of thinking (Moscardo, 2008), cooperation, and networking (Rønningen, 2010). Innovation comprises adaptive advantages, technology, information sharing, providers, customers, authority, productivity, quality, sustainable innovation, and communication (Maglio & Spohrer, 2013). Furthermore, innovation encompasses sustainable competitive advantage, performance improvements, differentiation (Jensen & Prebensen, 2015; Prange & Schlegelmilch, 2016), and long-term business (Ortiz-villajos & Sotoca, 2018; Divisekera & Nguyen, 2018), both in hospitality and tourism companies (Pikkemaat et al., 2019). In NBT, innovation and entrepreneurship enhance competitive advantage and performance, and both are influenced by policies (Nybakk & Hansen, 2008; Rodríguez et al., 2014).

BM research has little research in the tourism context (Reinhold et al., 2017). BMs and innovation became essential tools for companies and researchers (Lüdeke-Freund & Dembek, 2017). Competitive BMs reveal a logical way of doing business (Teece, 2010; Broekhuizen et al., 2018). Business model innovation (BMI) also means the integration of technology and service ecosystem perspective, entrepreneurship, and collaboration in BMs (Baden-Fuller & Haefliger, 2013). Financial results indicate a company's excellence, the BM adopted, and the level of innovation introduced (Ghicajanu et al., 2015). Different views on IBMs disclose companies' idiosyncrasies and market context (Broekhuizen et al., 2018; Wirtz & Daiser, 2018). Notwithstanding, IBM will not ensure companies' competitive advantage, as it can be imitated (Teece, 2018). However, IBM contributes positively to attaining a competitive advantage in the company's market entrance (Massa et al., 2017; Breuer et al., 2018). IBM is an imperative requirement in destinations' marketing and planning strategies (Gardiner & Scott, 2018).

Based on the discussion, we understand that NBT BMs should focus on adapting the existing BM, transforming it into a new tool of novelty, analogy reasoning, and conceptual combination

(Martins et al., 2015; Omerzel, 2016). This aligns with internal corporate reorganisation (Souto, 2015) and implementing necessary changes in NBT companies (Jensen & Prebensen, 2015). Therefore, adopting IBMs contributes positively to NBT management and competitive advantage (Souto, 2015), promoting unique experiences (Debarliev & Prof, 2016). Another positive contribution of NBT IBMs is their continuous adaptation and modification of character according to changing conditions (Fjeldstad & Snow, 2018; Geissdoerfer et al., 2018a). These BMs transformations are focused on changes in corporate sustainability strategy, long-term business resilience and adapting to market demands to achieve more sustainable products (Geissdoerfer, Pelzeter, & Santa-maria, 2023). In addition, NBT companies tend to be small or medium-sized, family-owned enterprises where IBMs reduce business risk and improve sustainable strategic development (França et al., 2017). Besides, ISBMs lend to cooperative sustainability and sustainable innovation (Boons & Lüdeke-Freund, 2013) to sustainable value and reliability (Schneider & Clauss, 2019). Finally, improving BM research in tourism (Reinhold et al., 2017) and on ISBM for NBT (Geissdoerfer et al., 2018a) goes beyond economic and financial dimensions, contributing to project research into sustainability dimensions such as environment, sociocultural and corporate sustainability (Lüdeke-Freund & Dembek, 2017; Schaltegger et al., 2016). Moreover, NBT companies are sustainably committed to benefiting from ISBM (Nasiri et al., 2018), are ecologically robust, and are economically sustainable (Täuscher & Abdelkafi, 2018).

Table 3 summarises the literature discussing innovation and sustainability to achieve competitive advantage in NBT BMs.

Table 2.3. Literature Discussing Innovation and Sustainability in Business Models (Author's elaboration)

<i>Innovation in Business models: competitive advantage</i>	
<i>Limited research on tourism innovation</i>	Hjalager (2010); Jensen & Prebensen (2015) Reinhold et al. (2017); Reinhold et al. (2018)
<i>Innovation, problem solving, cooperation</i>	Moscardo (2008); Rønningen (2010); Maglio & Spohrer (2013)
<i>Innovation, NBT and sustainable business</i>	Maglio and Spohrer (2013); Jensen and Prebensen (2015); Prange and Schlegelmilch (2016); (Ortiz-villajos and Sotoca (2018); Divisekera and Nguyen (2018); Pikkemaat et al. (2019); Nybakk and Hansen (2008); Rodríguez et al. (2014); Geissdoerfer et al. (2023)
<i>BMI and competitive advantage</i>	Lüdeke-Freund and Dembek (2017); Teece (2010); Broekhuizen et al. (2018); Baden-Fuller & Haefliger (2013); Ghicajanu et al. (2015); Martins et al. (2015); Omerzel (2016); Fjeldstad & Snow (2018); Geissdoerfer et al. (2018); Souto (2015); Debarliev and Prof (2016); Hossain (2017); Foss and Saebi (2017)
<i>BMI and sustainability for competitive advantage</i>	Schaltegger et al. (2012); França et al. (2017); Yang et al. (2017); Gjerding and Kringelum (2019); Heikkilä et al. (2018); Tidd and Bessant (2018); Andreassen et al. (2018); Broekhuizen et al. (2018); Wirtz and Daiser (2018); Teece (2018); Massa et al. (2017); Tiemann et al. (2018); Gardiner and Scott (2018)

6. Discussion and conclusions

This study presents a systematic literature review of 77 articles on the established research areas, yielding new knowledge and future research paths. The study summarises relevant articles published between 2002 and 2023. The comprehensive review unveils the understanding of innovation and sustainability in NBT BMs and its repercussions on long-term business and competitiveness. We overview the reviewed articles and propose definitions of the key underlying concepts- sustainability, NBT and BM. The research also identified several research gaps.

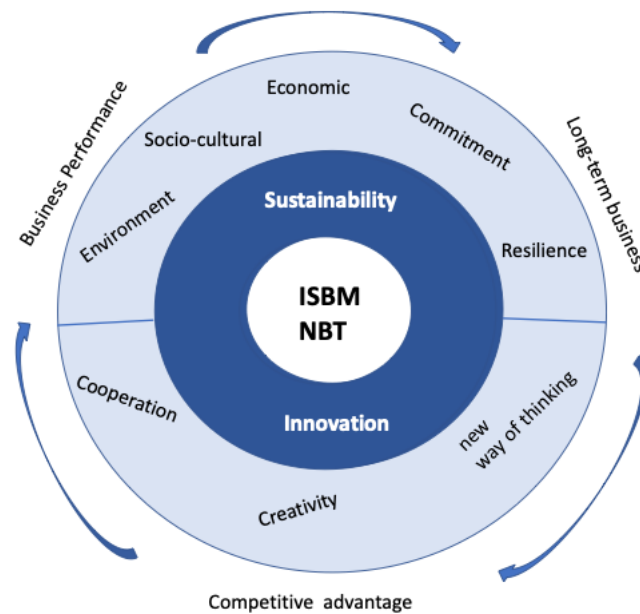
The literature review demonstrates the need to conduct proper research in tourism, namely NBT (Reinhold et al., 2017), pointing to innovation, sustainability, and ISBMs in NBT, vital to understanding NBT supply (Fredman & Tyrväinen, 2010). Additionally, the literature on IBM in tourism is scarce, and the introduction of innovation in tourism BMs is considered very relevant (Boons & Lüdeke-Freund, 2013; Geissdoerfer et al., 2018a; Rantala et al., 2018), impacting sustainability progress and companies' performance (Rantala et al., 2018). Moreover, the research showed that sustainability and companies' performance improvements are essential in reshaping tourism management and responding to high-demand customers and markets (Geissdoerfer et al., 2018a; Lahti et al., 2018; Schneider & Clauss, 2019). However, NBT companies commit poorly to sustainability (Reinhold et al., 2017). Rantala et al. (2018) pointed out that more companies are sustainably engaged as more companies develop IBMs. Notwithstanding, NBT companies lack business management literacy, as evidenced by poor entrepreneur training and inadequately qualified labour, exhibiting feeble adherence to new technologies (Biloslavo et al., 2018).

The most appropriate design for an SBM is unknown (Täuscher & Abdelkafi, 2018), and the embodiment of explicit sustainability dimensions in a BM is still missing (Biloslavo et al., 2018). However, innovation, BM, and IBM disclose a relationship with innovative digital tools (Andreassen et al., 2018), which can be instrumental in developing a new ISBM for NBT.

The literature acknowledges sustainability in BMs as a driving force, supporting companies' decision-making (Biloslavo et al., 2018; Sahebalzamani & Bertella, 2018), commitment, and dynamism (Lahti et al., 2018; Geissdoerfer et al., 2018b; Schneider & Clauss, 2019). Introducing sustainability in BMs enhances long-term business and resilience (Teece, 2010; Boons & Lüdeke-Freund, 2013; Sahebalzamani & Bertella, 2018; Bocken et al., 2018; Pieroni et al., 2019). The findings also evidenced that innovation in BMs supports problem-solving and business cooperation (Teece, 2010). Innovation in BMs brings creativity and new ways of thinking and enhances business performance and competitive advantage (Geissdoerfer et al., 2016; Lüdeke-Freund et al., 2018; Magretta, 2002; Massa et al., 2014; Ranjith, 2016; Breuer et al., 2018). The literature explains an inter-relationship between sustainability and innovation in NBT BMs (França et al., 2017; Martins et al., 2015; Omerzel, 2016; Schaltegger et al., 2012; Yang et al., 2017) both contributing to improving NBT companies' competitive advantage (Bocken et al., 2018; Boons & Lüdeke-Freund, 2013; Chesbrough, 2010; Massa et al., 2017; Pieroni et al., 2019; Souto, 2015; Teece, 2018), resilience (Pieroni et al. 2019), and long-term

business (Pieroni et al., 2019). Therefore, the results enabled us to identify the fundamental drivers of an ISBM NBT, as illustrated in Figure 6.

Figure 2.6. Driving factors of ISBMs for NBT (Author's elaboration)



However, only the drivers of the NBT ISBM were analysed in this paper. The following steps - design and implementation - were not considered and should be introduced in future research. The findings lead to understanding how and in which direction NBT BMs should evolve, providing specific contributions, and highlighting the current literature on NBT BMs and their possible future developments. The literature review evidenced limited research on tourism innovation (Hjalager, 2010), the lack of appropriate design for SBM (Täuscher & Abdelkafi, 2018; Geissdoerfer et al., 2017; Dentchev et al., 2018), on business sustainability and BMs for NBT (Biloslavo et al., 2018; Sahebalzamani & Bertella, 2018; Reinhold et al., 2017). There is a trend towards the development of SBM and the introduction of circular economy models, which are vital for the resilience and performance of NBT businesses (Bocken et al., 2018; Boons & Lüdeke-Freund, 2013; Sahebalzamani & Bertella, 2018; Pieroni et al., 2019; Teece, 2010). Besides its contribution to the understanding that ISBM for NBT materialises the

interconnection between innovation (Schaltegger et al., 2012) and sustainability (Geissdoerfer et al., 2017; Biloslavo et al., 2018; Sahebalzamani & Bertella, 2018), this work reveals comprehensive advantages that ISBMs for NBT should integrate the identified driving factors, to reduce risk, improve creativity and a new way of thinking, minimise resource use, and enhance business performance, promote cooperation, competitiveness and resilient business, as demonstrated in previous sections (Bocken et al., 2018; Boons & Lüdeke-Freund, 2013; Espiner et al., 2017; Pieroni et al., 2019; Sahebalzamani & Bertella, 2018; Teece, 2010). Consequently, we propose that NBT BMs research should evolve from the existing BMs to new and emerging BMs configurations such as ISBMs. We assume that innovation in BM implies a holistic change in BMs, incorporating socio-cultural and environmental dimensions of sustainability, and NBT BMs research should be oriented to ISBMs development (Geissdoerfer et al., 2017) as a new field of research (Geissdoerfer et al., 2018b).

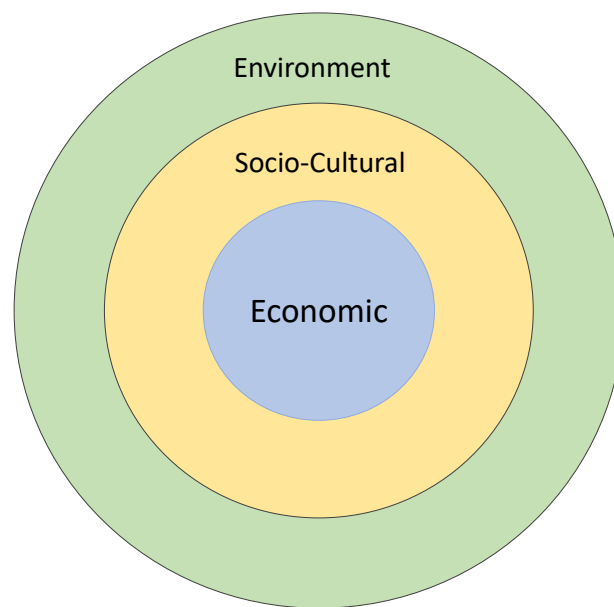
Based on this analysis, we propose a definition of ISBM, “a representation of the elements, and the interrelations between the set of elements, that an organisation uses to capture, create, and deliver value, explicitly incorporating innovation, the conservation of nature and natural resources, providing sustainable economic growth, and benefits to society”.

In addition, a definition of NBT is proposed. The literature suggests different definitions of NBT, emphasising contradictions and different perspectives between them, as discussed in section 2.1. Therefore, we propose a definition of NBT as “a responsible tourism, with an overnight stay, in protected areas or not, to enjoy biodiversity, landscapes, recreation, silence, culture, gastronomy, slow living, supported by local production, contributing for fair jobs, heritage and nature conservation, population settlement and promoting circular economy”.

There is a consensus that tourism activities directly impact the environment, the economy and the sociocultural dimension of sustainability (Abreu et al., 2022). The adoption of the ST concept in 1997 and the information accessed indicate that the approval of the UN_SDG and the 2030 Agenda for Sustainable Development in 2015 raised awareness of the importance of introducing sustainability dimensions in tourism. We define sustainability as replacing the traditional vision of balance between the various dimensions of sustainability (environmental, economic, and socio-cultural) since qualitatively different dimensions should not be treated equally. Supporting the perspective of Bramwell et al. (2017) and Baum et al. (2017), we define sustainability more as a philosophy than a concept, where the socio-cultural dimension supports the economy, and both are supported by the environment, as represented in Figure 7. Moreover,

our findings enable us to state that sustainability in tourism is constrained by knowledge, education and culture (Moscardo, 2008; Rønningen, 2010; Souto, 2015; Omerzel, 2016; Hossain, 2017).

Figure 2.7. Sustainability approach (Author's elaboration)



Finally, several research gaps were identified in the literature reviewed, generally related to a need for the appropriate design for SBM, business sustainability in NBT, and limited NBT innovation. We summarise the research gaps, which lend themselves to exciting directions for further research. The first is the fragmented knowledge in NBT, specifically regarding innovation, business constraints, and economic impacts (Freedman & Tyrväinen, 2010). Second, there is a gap in tourism and NBT publications (Biloslavo et al., 2018; Reinhold et al., 2017). The third is the absence of sustainability in NBT, considering all the sustainability dimensions, including developing sustainable products (Fredman & Tyrväinen, 2010; Fredman et al., 2012). Fourth, the knowledge deficiency of NBT suppliers to better understand NBT as a commercial setting (Fredman & Tyrväinen, 2010; Margaryan, 2016; Margaryan & Fredman, 2017), its role in nature protection, and the sustainable management of natural resources

(Fredman et al., 2012). Fifth, only some studies related to NBT addressed sustainability aspects (Reinhold et al., 2017). A sixth research gap relates to the absence of an appropriate design for an SBM (Täuscher & Abdelkafi, 2018), integrating all sustainability dimensions (Biloslavo et al., 2018). A seventh gap points to consistent research using primary and quantitative data on BMs for NBT (Reinhold et al., 2018). An eight-research gap relates to adopting a BM without a precise definition, such as sustainability-related concerns, particularly regarding the environmental dimension and innovation, which are barely addressed and viewed from a static perspective (Sahebalzamani & Bertella, 2018). Finally, a ninth research gap was identified on how SBM in NBT can contribute to sustainability (Sahebalzamani & Bertella, 2018).

The analysis and discussion undertaken in this literature review, complemented by the research gaps identified, legitimate the importance of furthering knowledge on BM, sustainability, and innovation in NBT. The UNTWO recommendations highlight sustainable and resilient tourism development, calling for sustainability and innovation in tourism (UNWTO, 2021). Introducing innovation and sustainability in NBT companies through the adoption of ISBM could be the basis for improving the performance of NBT companies (Breuer et al., 2018) and consequently with implications for society (Geissdoerfer et al., 2018). Hence, research should focus on consistent research fields on tourism BMs, using primary and quantitative data instead of new BM propositions (Reinhold et al., 2018).

7. Research contributions

Considering the theoretical perspective and the research gaps identified, this article conveys an integrated discussion, yielding a theoretical framework on BMs for NBT. The research identified managerial implications, and the report unveils relevant insights on BMs and ISBMs and their relevance to NBT companies' competitiveness, resilience, and quality improvement. This study contributes to NBT literature by providing new insights into the role of sustainability and innovation in BMs on companies' performance, resilience, risk reduction, resource use minimisation, business performance, and long-term business enhancement. Accordingly, this study unveils the recent challenges to ST, stressing the importance of strengthening sustainable NBT business through dynamic ISBMs. Additionally, the study presents working definitions of nature-based tourism and innovative sustainable business models and conveys an understanding of sustainability.

8. Limitations and further research avenues

The present systematic literature review performed an article research. Relevant articles were identified, providing significant insights on the subjects under discussion, such as sustainability and innovation in NBT BMs and the importance of competitiveness and long-term business in NBT business. However, the systematic literature review likely comprises only some pertinent scientific publications, considering the high number of academic journals and articles available. Our research showed that the adoption of ISBMs in tourism, particularly in NBT companies, is still missing. An in-depth analysis is required to address this gap, enhance knowledge, and provide guidance for the development of innovative BMs in tourism and NBT companies. Therefore, we suggest further research using primary and quantitative data on the suitable design of ISBMs in tourism and NBT. Additional studies should be conducted to validate the role of innovation and sustainability dimensions in ISBMs for NBT.

9. References:

- Abreu, C., Tardieu, F., & Abreu, A. (2022). Conservation and Niche Tourism in Pangatalan island- Palawan UNESCO Biosphere Reserve. In Novelli, M., et al., *Handbook of Niche Tourism*. ISBN: 978 1 83910 017 8
- Agyeiwaah, E., McKercher, B., & Sontikul, W. (2017). Identifying core indicators of sustainable tourism: A path forward? *Tourism Management Perspectives*, 24, 26–33. <https://doi.org/10.1016/j.tmp.2017.07.005>
- Albrecht, J. N. (2013). Networking for sustainable tourism - towards a research agenda. *Journal of Sustainable Tourism*, 21(5), 639–657. <https://doi.org/10.1080/09669582.2012.721788>
- Andreassen, T. W., Lervik-Olsen, L., Snyder, H., Van Riel, A. C. R., Sweeney, J. C., & Van Vaerenbergh, Y. (2018). Business model innovation and value-creation: the triadic way. *Journal of Service Management*, 29(5), 883–906. <https://doi.org/10.1108/JOSM-05-2018-0125>
- Baden-Fuller, C., & Haefliger, S. (2013). Business Models and Technological Innovation. *Long Range Planning*, 46(6), 419–426. <https://doi.org/10.1016/j.lrp.2013.08.023>
- Baden-Fuller, C., & Morgan, M. S. (2010). Business models as models. *Long Range Planning*, 43(2–3), 156–171. <https://doi.org/10.1016/j.lrp.2010.02.005>
- Baum, J., Cumming, G. S., & De Vos, A. (2017). Understanding Spatial Variation in the Drivers of Nature-based Tourism and Their Influence on the Sustainability of Private Land Conservation. *Ecological Economics*, 140, 225–234. <https://doi.org/10.1016/j.ecolecon.2017.05.005>
- Bhattacharya, U., Hsu, P. H., Tian, X., & Xu, Y. (2017). What Affects Innovation More: Policy or Policy Uncertainty? *Journal of Financial and Quantitative Analysis*, 52(5), 1869–1901. <https://doi.org/10.1017/S0022109017000540>
- Biloslavo, R., Bagnoli, C., & Edgar, D. (2018). An eco-critical perspective on business models: The value triangle as an approach to closing the sustainability gap. *Journal of Cleaner Production*, 174, 746–752. <https://doi.org/10.1016/j.jclepro.2017.10.281>
- Bishop, J., Kapila, S., Hicks, F., Mitchell, P., & Vorhies, F. (2009). New business models for biodiversity conservation. *Journal of Sustainable Forestry*, 28(3–5), 285–303. <https://doi.org/10.1080/10549810902791481>
- Bitner, M. J. (1992). Servicescapes: The impact of Physical Surroundings on Customers and employees. *Journal of Marketing*, 56(2), 57–71.
- Bocken, Nancy M P, Pauw, I. De, Bakker, C., Grinten, B. Van Der, Bocken, N. M. P., Pauw, I. De, ... Grinten, B. Van Der. (2016). Product design and business model strategies for a circular economy. *Journal of Industrial and Production Engineering*, 1015, 1–12. <https://doi.org/10.1080/21681015.2016.1172124>

- Bocken, N. M. P., Schuit, C. S. C., & Kraaijenhagen, C. (2018). Experimenting with a circular business model: Lessons from eight cases. *Environmental Innovation and Societal Transitions*, 28(July 2017), 79–95. <https://doi.org/10.1016/j.eist.2018.02.001>
- Bocken, N., Short, S., Rana, P., & Evans, S. (2013). A value mapping tool for sustainable business modelling. *Corporate Governance (Bingley)*, 13(5), 482–497. <https://doi.org/10.1108/CG-06-2013-0078>
- Boluk, K. A., Cavaliere, C. T., & Higgins-Desbiolles, F. (2019). A critical framework for interrogating the United Nations Sustainable Development Goals 2030 Agenda in tourism. *Journal of Sustainable Tourism*, 27(7), 847–864. <https://doi.org/10.1080/09669582.2019.1619748>
- Boons, F., & Lüdeke-Freund, F. (2013). Business models for sustainable innovation: State-of-the-art and steps towards a research agenda. *Journal of Cleaner Production*, 45, 9–19. <https://doi.org/10.1016/j.jclepro.2012.07.007>
- Boons, F., Montalvo, C., Quist, J., & Wagner, M. (2013). Sustainable innovation, business models and economic performance: An overview. *Journal of Cleaner Production*, 45, 1–8. <https://doi.org/10.1016/j.jclepro.2012.08.013>
- Bramwell, B., & Lane, B. (1993). Sustainable tourism: An evolving global approach. *Journal of Sustainable Tourism*, 1(1), 1–5. <https://doi.org/10.1080/09669589309450696>
- Bramwell, B., Higham, J., Lane, B., & Miller, G. (2017). Twenty-five years of sustainable tourism and the Journal of Sustainable Tourism: looking back and moving forward. *Journal of Sustainable Tourism*, 25(1), 1–9. <https://doi.org/10.1080/09669582.2017.1251689>
- 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>
- Breuer, H., Fitcher, K., Tiemann, I. (2018). Sustainability-oriented business model development : principles , criteria and tools. *Int. J. Entrepreneurial Venturing*, 10(2), 256–286. <https://doi.org/10.1504/ijev.2018.10013801>
- Broekhuizen, T. L. J., Bakker, T., & Postma, T. J. B. M. (2018). Implementing new business models: What challenges lie ahead? *Business Horizons*, 61(4), 555–566. <https://doi.org/10.1016/j.bushor.2018.03.003>
- Bryman, A. (2012). *Social Research Methods* (4th ed.). Oxford, New York: Oxford University Press Inc..
- Buckley, R. (2012). Sustainable tourism: Research and reality. *Annals of Tourism Research*, 39(2), 528–546. <https://doi.org/10.1016/j.annals.2012.02.003>
- Butler, R. W. (1999). Sustainable tourism: A state-of-the-art review. *Tourism Geographies*, 1(1),

7–25. <https://doi.org/10.1080/14616689908721291>

- Camisón, C., & Monfort-Mir, V. M. (2012). Measuring innovation in tourism from the Schumpeterian and the dynamic-capabilities perspectives. *Tourism Management*, 33(4), 776–789. <https://doi.org/10.1016/j.tourman.2011.08.012>
- Chesbrough, H. (2010). Business model innovation: Opportunities and barriers. *Long Range Planning*, 43(2–3), 354–363. <https://doi.org/10.1016/j.lrp.2009.07.010>
- Chung, M. G., Dietz, T., & Liu, J. (2018). Global relationships between biodiversity and nature-based tourism in protected areas. *Ecosystem Services*, 34(2017), 11–23. <https://doi.org/10.1016/j.ecoser.2018.09.004>
- Connell, A. (2018). Islands: balancing development and sustainability? *Environmental Conservation*, 45(2), 111–124. <https://doi.org/10.1017/S0376892918000036>
- Cosenz, F., & Noto, G. (2018). A dynamic business modelling approach to design and experiment new business venture strategies. *Long Range Planning*, 51(1), 127–140. <https://doi.org/10.1016/j.lrp.2017.07.001>
- Cucculelli, M., & Goffi, G. (2016). Does sustainability enhance tourism destination competitiveness? Evidence from Italian Destinations of Excellence. *Journal of Cleaner Production*, 111, 370–382. <https://doi.org/10.1016/j.jclepro.2014.12.069>
- Debarliev, S., & Prof, A. (2016). Creating Distinctive Value Proposition in Tourism by Business Model Tools : Case Study of the City of Ohrid. *European Journal of Scientific Research*, 12(35), 82–104. <https://doi.org/10.19044/esj.2016.v12n35p82>
- Dentchev, N., Rauter, R., Jóhannsdóttir, L., Snihur, Y., Rosano, M., Baumgartner, R., ... Jonker, J. (2018). Embracing the variety of sustainable business models: A prolific field of research and a future research agenda. *Journal of Cleaner Production*, 194, 695–703. <https://doi.org/10.1016/j.jclepro.2018.05.156>
- Divisekera, S., & Nguyen, V. K. (2018). Determinants of innovation in tourism evidence from Australia. *Tourism Management*, 67, 157–167. <https://doi.org/10.1016/j.tourman.2018.01.010>
- Ducarme, F., & Couvet, D. (2020). What does ‘nature’ mean? *Palgrave Communications*, 6(1), 1–8. <https://doi.org/10.1057/s41599-020-0390-y>
- Dzialis, M., & Blind, K. (2019). Innovation indicators throughout the innovation process: An extensive literature analysis. *Technovation*, 80, 3–29. <https://doi.org/10.1016/j.technovation.2018.05.005>
- Espinero, S., Orchiston, C., & 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*, 25(10), 1385–1400. <https://doi.org/10.1080/09669582.2017.1281929>
- Evans, S., Vladimirova, D., Holgado, M., Van Fossen, K., Yang, M., Silva, E. A., & Barlow, C. Y. (2017). Business Model Innovation for Sustainability: Towards a Unified Perspective for Creation of Sustainable Business Models. *Business Strategy and the Environment*, 26(5), 597–608. <https://doi.org/10.1002/bse.1939>
- Fennell, D. A. (2000). What's in a name? Conceptualising natural resource-based tourism. *Tourism Recreation Research*, 25(1), 97–100. <https://doi.org/10.1080/02508281.2000.11014903>
- Fjeldstad, Ø. D., & Snow, C. C. (2018). Business models and organisation design. *Long Range Planning*, 51(1), 32–39. <https://doi.org/10.1016/j.lrp.2017.07.008>
- Foss, N. J., & Saebi, T. (2017). Fifteen Years of Research on Business Model Innovation: How Far Have We Come, and Where Should We Go? *Journal of Management*, 43(1), 200–227. <https://doi.org/10.1177/0149206316675927>
- Foss, N. J., & Saebi, T. (2018). Business models and business model innovation: Between wicked and paradigmatic problems. *Long Range Planning*, 51(1), 9–21. <https://doi.org/10.1016/j.lrp.2017.07.006>
- Fossgard, K., & Fredman, P. (2019). Dimensions in the nature-based tourism experiencescape: An explorative analysis. *Journal of Outdoor Recreation and Tourism*, 28, 100219. <https://doi.org/10.1016/j.jort.2019.04.001>
- França, C. L., Broman, G., Robèrt, K. H., Basile, G., & Trygg, L. (2017). An approach to business model innovation and design for strategic sustainable development. *Journal of Cleaner Production*, 140, 155–166. <https://doi.org/10.1016/j.jclepro.2016.06.124>
- Fredman, P., & Tyrväinen, L. (2010). Frontiers in Nature-Based Tourism. *Scandinavian Journal of Hospitality & Tourism*, 10(3), 177–189. <https://doi.org/10.1080/15022250.2010.502365>
- Fredman, P., Wall-Reinius, S., & Grundén, A. (2012). The Nature of Nature in Nature-based Tourism. *Scandinavian Journal of Hospitality and Tourism*, 12(4), 289–309. <https://doi.org/10.1080/15022250.2012.752893>
- Furunes, T. (2019). Reflections on systematic reviews: moving golden standards? *Scandinavian Journal of Hospitality and Tourism*, 19(3), 227–231. <https://doi.org/10.1080/15022250.2019.1584965>
- Gardiner, S., & Scott, N. (2018). Destination Innovation Matrix: A framework for new tourism experience and market development. *Journal of Destination Marketing and Management*, 10, 122–131. <https://doi.org/10.1016/j.jdmm.2018.07.002>
- Gault, F. (2018). Defining and measuring innovation in all sectors of the economy. *Research*

- Policy*, 47(3), 617–622. <https://doi.org/10.1016/j.respol.2018.01.007>
- Geissdoerfer, M., Bocken, N. M. P., & Hultink, E. J. (2016). Design thinking to enhance the sustainable business modelling process – A workshop based on a value mapping process. *Journal of Cleaner Production*, 135, 1218–1232. <https://doi.org/10.1016/j.jclepro.2016.07.020>
- Geissdoerfer, M., Morioka, S. N., de Carvalho, M. M., & Evans, S. (2018a). Business models and supply chains for the circular economy. *Journal of Cleaner Production*, 190, 712–721. <https://doi.org/10.1016/j.jclepro.2018.04.159>
- Geissdoerfer, M., Savaget, P., Bocken, N. M. P., & Hultink, E. J. (2017a). The Circular Economy – A new sustainability paradigm? *Journal of Cleaner Production*, 143, 757–768. <https://doi.org/10.1016/j.jclepro.2016.12.048>
- Geissdoerfer, M., Savaget, P., & Evans, S. (2017b). The Cambridge Business Model Innovation Process. *Procedia Manufacturing*, 8(October 2016), 262–269. <https://doi.org/10.1016/j.promfg.2017.02.033>
- Geissdoerfer, M., Vladimirova, D., & Evans, S. (2018b). Sustainable business model innovation: A review. *Journal of Cleaner Production*, 198, 401–416. <https://doi.org/10.1016/j.jclepro.2018.06.240>
- Geissdoerfer, M., Pelzeter, C., & Santa-maria, T. (2023). Drivers and barriers for circular business model innovation, (November 2022), 1–19. <https://doi.org/10.1002/bse.3339>
- Ghicajanu, M., Irimie, S., Marica, L., & Munteanu, R. (2015). Criteria for Excellence in Business. *Procedia Economics and Finance*, 23(October 2014), 445–452. [https://doi.org/10.1016/s2212-5671\(15\)00388-3](https://doi.org/10.1016/s2212-5671(15)00388-3)
- Gjerding, A. N., & Kringelum, L. B. (2019). Identifying Contexts of Business Model Innovation for Exploration and Exploitation Across Value Networks //Conceptualising zones of business model innovation for exploration and exploitation in value networks. *Journal of Business Models*, 3(6), 45–62. <https://doi.org/10.5278/ojs.jbm.v6i3.1835>
- Gómez-Baggethun, E., de Groot, R., Lomas, P. L., & Montes, C. (2010). The history of ecosystem services in economic theory and practice: From early notions to markets and payment schemes. *Ecological Economics*, 69(6), 1209–1218. <https://doi.org/10.1016/j.ecolecon.2009.11.007>
- Goodwin, H. (1996). In pursuit of ecotourism. *Biodiversity and Conservation*, 5(3), 277–291. <https://doi.org/10.1007/bf00051774>
- Hardy, A., Beeton, R. J. S., & Pearson, L. (2002). Sustainable tourism: An overview of the concept and its position in relation to conceptualisations of tourism. *Journal of Sustainable Tourism*, 10(6), 475–496. <https://doi.org/10.1080/09669580208667183>
- Heikkilä, M., Bouwman, H., & Heikkilä, J. (2018). From strategic goals to business model innovation paths: an exploratory study. *Journal of Small Business and Enterprise Development*, 25(1), 107–128. <https://doi.org/10.1108/JSBED-03-2017-0097>

- Higgins-Desbiolles, F. (2018). Sustainable tourism: Sustaining tourism or something more? *Tourism Management Perspectives*, 25(November 2017), 157–160. <https://doi.org/10.1016/j.tmp.2017.11.017>
- Hjalager, A. M. (2010). A review of innovation research in tourism. *Tourism Management*, 31(1), 1–12. <https://doi.org/10.1016/j.tourman.2009.08.012>
- Hjalager, A. M. (2015). 100 Innovations That Transformed Tourism. *Journal of Travel Research*, 54(1), 3–21. <https://doi.org/10.1177/0047287513516390>
- Hossain, M. (2017). Business Model Innovation: Past Research, Current Debates, and Future Directions. *Journal of Strategy and Management*, 10(3), 342–359. <https://doi.org/10.2139/ssrn.2836439>
- Hunter, C. (1997). Sustainable tourism as an adaptive paradigm. *Annals of Tourism Research*, 24(4), 850–867. [https://doi.org/10.1016/S0160-7383\(97\)00036-4](https://doi.org/10.1016/S0160-7383(97)00036-4)
- Jensen, Ø., & Prebensen, N. (2015). Innovation and Value Creation in Experience-based Tourism. *Scandinavian Journal of Hospitality and Tourism*, 15(Suppl. 1), 1–8. <https://doi.org/10.1080/15022250.2015.1066093>
- Joyce, A., & Paquin, R. L. (2016). The triple layered business model canvas: A tool to design more sustainable business models. *Journal of Cleaner Production*, 135, 1474–1486. <https://doi.org/10.1016/j.jclepro.2016.06.067>
- Kahn, K. B. (2018). Understanding innovation. *Business Horizons*, 61(3), 453–460. <https://doi.org/10.1016/j.bushor.2018.01.011>
- Karp, D. S., Mendenhall, C. D., Callaway, E., Frishkoff, L. O., Kareiva, P. M., Ehrlich, P. R., & Daily, G. C. (2015). Confronting and resolving competing values behind conservation objectives. *Proceedings of the National Academy of Sciences of the United States of America*, 112(35), 11132–11137. <https://doi.org/10.1073/pnas.1504788112>
- Kristjánsdóttir, K. R., Ólafsdóttir, R., & Ragnarsdóttir, K. V. (2017). Reviewing integrated sustainability indicators for tourism. *Journal of Sustainable Tourism*, 26(4), 583–599. <https://doi.org/10.1080/09669582.2017.1364741>
- Kuzman, T., Bellos, S. K., & Đulić, K. (2019). Determinants of Innovation-based Sustainability in Transition and Developing Economies. *Economic Themes*, 56(3), 413–438. <https://doi.org/10.2478/ethemes-2018-0024>
- Laarman, J. and Durst, P. (1987). Nature travel in the tropics. *Journal of Forestry*, 5, 43–46.
- Lahti, T., Wincent, J., & Parida, V. (2018). A definition and theoretical review of the circular economy, value creation, and sustainable business models: Where are we now and where should research move in the future? *Sustainability (Switzerland)*, 10(8), 2799.

<https://doi.org/10.3390/su10082799>

- Lane, B. (2017). Sustainable tourism: its evolution and its future. *Cuadernos Económicos de ICE*, 93, 9–28. <https://doi.org/10.32796/cice.2017.93.6145>
- Lane, B. (2018). Will sustainable tourism research be sustainable in the future? An opinion piece. *Tourism Management Perspectives*, 25, 161–164. <https://doi.org/10.1016/j.tmp.2017.12.001>
- Lang, C. T., & O’Leary, J. T. (2013). Motivation, participation, and preference: A multi - segmentation approach of the Australian nature travel market. In M. Oppermann (Ed.), *Geography and Tourism Marketing* (pp. 159–180). Taylor and Francis. <https://doi.org/10.4324/9780203047286-13>
- Lankoski, L. (2016). Alternative conceptions of sustainability in a business context. *Journal of Cleaner Production*, 139, 847–857. <https://doi.org/10.1016/j.jclepro.2016.08.087>
- Liu, Z. (2003). Sustainable Tourism Development: A Critique Sustainable Tourism Development : <https://doi.org/10.1080/09669580308667216>
- Lu, J., & Nepal, S. K. (2009). Sustainable tourism research: An analysis of papers published in the Journal of Sustainable Tourism. *Journal of Sustainable Tourism*, 17(1), 5–16. <https://doi.org/10.1080/09669580802582480>
- Lüdeke-Freund, F., & Dembek, K. (2017). Sustainable business model research and practice: Emerging field or passing fancy? *Journal of Cleaner Production*, 168, 1668–1678. <https://doi.org/10.1016/j.jclepro.2017.08.093>
- Lüdeke-Freund, F., Carroux, S., Joyce, A., Massa, L., & Breuer, H. (2018). The sustainable business model pattern taxonomy—45 patterns to support sustainability-oriented business model innovation. *Sustainable Production and Consumption*, 15, 145–162. <https://doi.org/10.1016/j.spc.2018.06.004>
- Lüdeke-Freund, F; Gold, S; Bocken, N. M. P. (2019). A Review and Typology of Circular Economy Business Model Patterns. *Journal of Industrial Ecology*, 23(1), 36–61. <https://doi.org/10.1111/jiec.12763>
- Lundmark, L., & Müller, D. K. (2010). The supply of nature-based tourism activities in Sweden. *Tourism Review*, 58(4), 379–393.
- Maglio, P. P., & Spohrer, J. (2013). A service science perspective on business model innovation. *Industrial Marketing Management*, 42, 665–670. <https://doi.org/10.1016/j.indmarman.2013.05.007>
- Magretta, J. (2002). Why business models matter. *Harvard Business Review*, 3–8.
- Margaryan, L. (2016). Nature as a commercial setting: the case of nature-based tourism providers in Sweden. *Current Issues in Tourism*, 21(16), 1893–1911.

<https://doi.org/10.1080/13683500.2016.1232378>

- \
- Margaryan, L., & Fredman, P. (2017). Natural amenities and the regional distribution of nature-based tourism supply in Sweden. *Scandinavian Journal of Hospitality and Tourism*, 17(2), 145–159. <https://doi.org/10.1080/15022250.2016.1153430>
- Martins, L. L., Rindova, V. P., & Greenbaum, B. E. (2015). Unlocking the hidden value of concepts: A cognitive approach to business model innovation. *Strategic Entrepreneurship Journal*, 9(1), 99–117. <https://doi.org/10.1002/sej.1191>
- Massa, L., Tucci, C., & Afuah, A. (2014). Academy of Management Annals A CRITICAL ASSESSMENT OF BUSINESS MODEL RESEARCH. *Academy of Management Annals*, 11(1), 73–104. <https://doi.org/10.5465/annals.2014.0072>
- Massa, L., Tucci, C. L., & Afuah, A. (2017). A critical assessment of business model research. *Academy of Management Annals*, 11(1), 73–104. <https://doi.org/10.5465/annals.2014.0072>
- Maxim, C. & Morrison, A. (2022): Crisis in the city? A systematic literature review of crises and tourism cities, *Tourism Recreation Research*, 1-13. DOI: 10.1080/02508281.2022.2078063
- Mehmetoglu, M. (2005). A case study of nature-based tourists: Specialists versus generalists. *Journal of Vacation Marketing*, 11(4), 357–369. <https://doi.org/10.1177/1356766705056634>
- Moscardo, G. (2008). Sustainable Tourism Innovation: Challenging Basic Assumptions. *Tourism and Hospitality Research*, 8(1), 4–13. <https://doi.org/10.1057/thr.2008.7>
- Nybakk, E., & Hansen, E. (2008). Entrepreneurial attitude, innovation and performance among Norwegian nature-based tourism enterprises. *Forest Policy and Economics*, 10(7–8), 473–479. <https://doi.org/10.1016/j.forpol.2008.04.004>
- Nunkoo, R., Seetanah, B., & Agrawal, S. (2019). Guest editorial. *Tourism Review*, 74(2), 129–137. <https://doi.org/10.1108/TR-04-2019-209>
- Omerzel, D. G. (2016). A systematic review of research on innovation in hospitality and tourism. *International Journal of Contemporary Hospitality Management*, 28(3), 516–558. <https://doi.org/10.1108/IJCHM-10-2014-0510>
- Ortiz-Villajos, J. M., & Sotoca, S. (2018). Innovation and business survival: A long-term approach. *Research Policy*, 47(8), 1418–1436. <https://doi.org/10.1016/j.respol.2018.04.019>
- Osterwalder, A., Pigneur, Y., & Clark, T. (2010). *Business model generation: A handbook for visionaries, game changers, and challengers*. Wiley.
- Pieroni, M. P. P., McAloone, T. C., & Pigosso, D. C. A. (2019). Business model innovation for

- circular economy and sustainability: A review of approaches. *Journal of Cleaner Production*, 215, 198–216. <https://doi.org/10.1016/j.jclepro.2019.01.036>
- Pikkemaat, B., Peters, M., & Bichler, B. F. (2019). Innovation research in tourism: Research streams and actions for the future. *Journal of Hospitality and Tourism Management*, 41, 184–196. <https://doi.org/10.1016/j.jhtm.2019.10.007>
- Prange, C., & Schlegelmilch, B. B. (2016). Towards a balanced view of innovations. *Management Decision*, 54(2), 441–454. <https://doi.org/10.1108/MD-05-2015-0198>
- Presenza, A., Petruzzelli, A. M., & Natalicchio, A. (2019). Business model innovation for sustainability. Highlights from the tourism and hospitality industry. *Sustainability (Switzerland)*, 11(1), 1–5. <https://doi.org/10.3390/su11010212>
- Pope, J., Bond, A., Hugé, J., & Morrison-Saunders, A. (2017). Reconceptualising sustainability assessment. *Environmental Impact Assessment Review*, 62, 205–215. <https://doi.org/10.1016/j.eiar.2016.11.002>
- Rajapathirana, R. P. J., & Hui, Y. (2018). Relationship between innovation capability, innovation type, and company performance. *Journal of Innovation and Knowledge*, 3(1), 44–55. <https://doi.org/10.1016/j.jik.2017.06.002>
- Ranjith, V. K. (2016). Business Models and Competitive Advantage. *Procedia Economics and Finance*, 37(16), 203–207. [https://doi.org/10.1016/s2212-5671\(16\)30114-9](https://doi.org/10.1016/s2212-5671(16)30114-9)
- Rantala, T., Ukko, J., Saunila, M., & Havukainen, J. (2018). The effect of sustainability in the adoption of technological, service, and business model innovations. *Journal of Cleaner Production*, 172, 46–55. <https://doi.org/10.1016/j.jclepro.2017.10.009>
- Rauter, R., Jonker, J., & Baumgartner, R. J. (2017). Going one's own way: drivers in developing business models for sustainability. *Journal of Cleaner Production*, 140, 144–154. <https://doi.org/10.1016/j.jclepro.2015.04.104>
- Reinhold, S., Zach, F. J., & Krizaj, D. (2017). Business models in tourism: a review and research agenda. *Tourism Review*, 72(4), 462–482. <https://doi.org/10.1108/TR-05-2017-0094>
- Reinhold, S., Zach, F. J., & Krizaj, D. (2018). Business models in tourism – state of the art. *Tourism Review*, 74 (6), 1120–1134. <https://doi.org/10.1108/TR-02-2018-0027>
- Richardson, J. E. (2005). The Business Model: An Integrative Framework for Strategy Execution. *Strategic Change*, 17(5). <https://doi.org/10.2139/ssrn.932998>
- Ritter, T., & Lettl, C. (2018). The wider implications of business-model research. *Long Range Planning*, 51(1), 1–8. <https://doi.org/10.1016/j.lrp.2017.07.005>
- Rodríguez, I., Williams, A. M., & Hall, C. M. (2014). Tourism innovation policy: Implementation and outcomes. *Annals of Tourism Research*, 49, 76–93. <https://doi.org/10.1016/j.annals.2014.08.004>
- Rønningen, M. (2010). Innovative processes in a nature-based tourism case: The role of a tour-

- operator as the driver of innovation. *Scandinavian Journal of Hospitality and Tourism*, 10(3), 190–206. <https://doi.org/10.1080/15022250.2010.491255>
- Ruhanen, L., Weiler, B., Moyle, B. D., & McLennan, C. Lee J. (2015). Trends and patterns in sustainable tourism research: a 25-year bibliometric analysis. *Journal of Sustainable Tourism*, 23(4), 517–535. <https://doi.org/10.1080/09669582.2014.978790>
- Saarinen, J. (2014). Critical sustainability: Setting the limits to growth and responsibility in tourism. *Sustainability (Switzerland)*, 6(1), 1–17. <https://doi.org/10.3390/su6010001>
- Schneider, S., Clauss, T. (2019). Business Models for Sustainability: Choices and Consequences. *Organization & Environment*, 33(3), 384–407. <https://doi.org/10.1177/1086026619854217>
- Sahebalzamani, S., & Bertella, G. (2018). Business models and sustainability in nature tourism: A systematic review of the literature. *Sustainability (Switzerland)*, 10(9), 1–15. <https://doi.org/10.3390/su10093226>
- Schaltegger, S., Hansen, E. G., & Lüdeke-Freund, F. (2016). Business Models for Sustainability: Origins, Present Research, and Future Avenues. *Organisation and Environment*, 29(1), 3–10. <https://doi.org/10.1177/1086026615599806>
- Schaltegger, S., Lüdeke-Freund, F., & Hansen, E. G. (2012). Business cases for sustainability: The role of business model innovation for corporate sustainability. *International Journal of Innovation and Sustainable Development*, 6(2), 95–119. <https://doi.org/10.1504/IJISD.2012.046944>
- 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>
- Shafer, S. M., Smith, H. J., & Linder, J. C. (2005). The power of business models. *Business Horizons*, 48(3), 199–207. <https://doi.org/10.1016/j.bushor.2004.10.014>
- Siddaway, A., Wood, A., & Hedges, L. (2019). How to Do a Systematic Review: A Best Practice Guide for Conducting and Reporting Narrative Reviews, Meta-Analyses, and Meta-Syntheses. *Annual Review of Psychology*, 70, 747–770. <https://doi.org/10.1146/annurev-psych-010418-102803>
- Soleimani, S., Bruwer, J., Gross, M. J., Lee, R., Soleimani, S., Bruwer, J., ... Lee, R. (2019). Current Issues in Tourism Astro-tourism conceptualisation as special-interest tourism (SIT) field : a phenomenological approach. *Current Issues in Tourism*, 22(18), 2299–2314. <https://doi.org/10.1080/13683500.2018.1444021>
- Souto, J. E. (2015). Business model innovation and business concept innovation as the context of incremental innovation and radical innovation. *Tourism Management*, 51, 142–155.

<https://doi.org/10.1016/j.tourman.2015.05.017>

- Steven, R., Castley, J. G., & Buckley, R. (2013). Tourism Revenue as a Conservation Tool for Threatened Birds in Protected Areas. *PLoS ONE*, 8(5), 1–8. <https://doi.org/10.1371/journal.pone.0062598>
- Stubbs, W., & Cocklin, C. (2008). Conceptualising a “sustainability business model.” *Organisation and Environment*, 21(2), 103–127. <https://doi.org/10.1177/1086026608318042>
- Täuscher, K., & Abdelkafi, N. (2018). Scalability and robustness of business models for sustainability: A simulation experiment. *Journal of Cleaner Production*, 170, 654–664. <https://doi.org/10.1016/j.jclepro.2017.09.023>
- Teece, D. J. (2010). Business models, business strategy and innovation. *Long Range Planning*, 43(2–3), 172–194. <https://doi.org/10.1016/j.lrp.2009.07.003>
- Teece, D. J. (2018). Business models and dynamic capabilities. *Long Range Planning*, 51(1), 40–49. <https://doi.org/10.1016/j.lrp.2017.06.007>
- Tidd, J., & Bessant, J. (2018). Innovation Management Challenges: From Fads To Fundamentals. *International Journal of Innovation Management*, 22(5), 1840007. <https://doi.org/10.1142/S1363919618400078>
- Tokmak, C., Doğantekin, A., & Kiliç, İ. (2018). A Bibliometric Analysis on Sustainable Tourism Studies: A Review of 8 Years. *Turizm Akademik Dergisi*, 5(2), 63–72. Retrieved from <https://dergipark.org.tr/tr/download/article-file/599133>
- Tölkes, C. (2018). Sustainability communication in tourism – A literature review. *Tourism Management Perspectives*, 27, 10–21. <https://doi.org/10.1016/j.tmp.2018.04.002>
- Torres-Delgado, A., & López Palomeque, F. (2012). The growth and spread of the concept of sustainable tourism: The contribution of institutional initiatives to tourism policy. *Tourism Management Perspectives*, 4, 1–10. <https://doi.org/10.1016/j.tmp.2012.05.001>
- Tyrväinen, L., Silvennoinen, H., Nousiainen, I., & Tahvanainen, L. (2001). Rural tourism in Finland: Tourists’ expectation of landscape and environment. *Scandinavian Journal of Hospitality and Tourism*, 1(2), 133–149. <https://doi.org/10.1080/150222501317244047>
- UNWTO Tourism Highlights: 2017 Edition. *UNWTO Tourism Highlights: 2017 Edition*. World Tourism Organization (UNWTO). <https://doi.org/10.18111/9789284419029>
- United Nations World Tourism Organization. (2021, Jun 03). <https://www.unwto.org/wtd2021>
- USA. (2015). Institutional Relations and Resource Mobilization.
- Vuković, A., Damjanović, J., Papić-Blagojević, N., Jošanov-Vrgović, I., & Gagić, S. (2018). Impact of Leadership on Innovation: Evidence from the Hotel Industry. *Journal of Sustainable Business and Management Solutions in Emerging Economies*, 23(3), 57–66. <https://doi.org/10.7595/management.fon.2018.0008>

- Wieland, H., Hartmann, N. N., & Vargo, S. L. (2017). Business models as service strategy. *Journal of the Academy of Marketing Science*, 45(6), 925–943. <https://doi.org/10.1007/s11747-017-0531-z>
- Williams, A. M., & Shaw, G. (2011). Internationalisation and innovation in tourism. *Annals of Tourism Research*, 38(1), 27–51. <https://doi.org/10.1016/j.annals.2010.09.006>
- Wirtz, B. W., & Daiser, P. (2018). Business Model Innovation Processes : A Systematic Literature Review. *Journal of Business Models*, 6(1), 40–58.
- Wirtz, B. W., Pistoia, A., Ullrich, S., & Göttel, V. (2016). Business Models: Origin, Development and Future Research Perspectives. *Long Range Planning*, 49(1), 36–54. <https://doi.org/10.1016/j.lrp.2015.04.001>
- Yang, M., Evans, S., Vladimirova, D., & Rana, P. (2017). Value uncaptured perspective for sustainable business model innovation. *Journal of Cleaner Production*, 140, 1794–1804. <https://doi.org/10.1016/j.jclepro.2016.07.102>
- Zach, F. J., & Hill, T. L. (2017). Network, knowledge and relationship impacts on innovation in tourism destinations. *Tourism Management*, 62, 196–207. <https://doi.org/10.1016/j.tourman.2017.04.001>
- Zolfani, S. H., Sedaghat, M., Maknoon, R., & Zavadskas, E. K. (2015). Sustainable tourism: A comprehensive literature review on frameworks and applications. *Economic Research-Ekonomska Istrazivanja*, 28(1), 1–30. <https://doi.org/10.1080/1331677X.2014.995895>
- Zott, C., & Amit, R. (2010). Business model design: An activity system perspective. *Long Range Planning*, 43(2–3), 216–226. <https://doi.org/10.1016/j.lrp.2009.07.004>

Annex A

(Author's elaboration)

Level of Analysis	Authors	Year	Country	Research Topics	Framework	Research strategy	Main Findings
Business	Magretta, J.	2002	USA	BM and strategy discussion	BM	Qualitative research	A BM is an essential basis for employee communication and motivation. A good business model can become a powerful tool for improving execution
Business	Richardson, J. E.	2005	UK	BM in a simple logical structure reflecting current thinking in strategy	BM	Qualitative research	A BM framework provides a simple and logical structure for the strategist to think about how the many activities of the company work to execute the strategy
Business	Shafer, S. M., Smith, H. J., & Linder, J. C.	2005	UK	Identifies and classifies the components of BM	BM	Qualitative research	Long-term success increases according to an organisation's strategic options through a BM. A BM helps to analyse and communicate business strategic choices
Tourism	Moscardo, G.	2008	UK	Sustainable tourism, sustainable development in touristic regions, tourism innovation	Innovation	Mixed-methods approach	The paper evidences the correlation between entrepreneurs' lack of knowledge and the introduction of innovation in tourism. Tourists are relevant in tourism development and innovation in tourism
NBT	Nybakk, E., & Hansen, E.	2008	Netherlands	The influence of Entrepreneurial Attitude on innovativeness and performance in Norwegian Nature-Based Tourism enterprises	Innovation	Qualitative research	Innovation gives small enterprises a competitive advantage, differentiating them from competitors. An entrepreneurial attitude contributes to improving enterprises' income. Innovative ideas and regular experimentation benefit small enterprises
Business	Stubbs, W., & Cocklin, C.	2008	USA	Sustainable business model (SBM), where sustainability assumes the role of the company's driving force and decision-making	SBM	Quantitative research	The SBM is one ideal of a sustainable organisation. The SBM is not absolute or prescriptive. It will continually be enhanced as we gain further understanding of how companies operationalise sustainability

Level of Analysis	Authors	Year	Country	Research Topics	Framework	Research strategy	Main Findings
Business	Baden-Fuller, C., & Morgan, M. S.	2010	UK	The utility of BM	BM	Qualitative research	BM are not recipes or scientific models or scale and role models but can play any – or all – of these different roles for different companies and different purposes and will often play multiple roles at the same time
Business	Chesbrough, H.	2010	UK	The barriers to BM Innovation (BMI). Identifies conflicts and barriers to understanding	BMI	Qualitative research	BMI is vitally important and yet very difficult to achieve. Companies need to develop the capability to innovate their BM, as well as their ideas and technologies. The barriers to changing the BM are real, and tools such as maps are helpful but not enough
NBT	Fredman, P., & Tyrväinen, L.	2010	UK	The commercialisation of NBT	NBT	Qualitative research	Understanding the supply of NBT. The paper discusses NBT from the perspectives of entrepreneurs, suppliers, locals, and tourists. The article stresses the use of private land, public land, and protected areas in NBT activities
Tourism	Hjalager, A. M.	2010	UK	Sustainable BM framework value triangle including environmental, social, and economic sustainability dimensions	Innovation	Qualitative research	Limited empirical knowledge exists about the effects of innovation actions on tourism enterprises and tourism destinations. Inter-company relations are crucial for the transfer of information, inspiration, and, eventually, innovations. There is still an incomplete understanding of how innovation processes take place in tourism enterprises and organisations, including what types of capacities and incentives they draw on
NBT	Rønningen, M.	2010	UK	The role of tour operators as drivers of innovation in NBT	Innovation	Qualitative research	The tourism industry, including NBT, is characterised by many small enterprises. They should increase their innovative capacity, and there seems to be a lack of adequate strategies or instruments to boost innovation in tourism and/or NBT. Additionally, the concept of a system with the tour operator as a driver of innovation offers a potential answer to this challenge and represents a complementary perspective to the scientific approaches that focus on innovation systems or networking and other types of collaboration
Business	Teece, D. J. (2010)	2010	UK	BM significance, business strategy, and innovation management	BM	Qualitative research	BM's have a relevant role in companies and are connected with business strategy, innovation management, and economic theory

Level of Analysis	Authors	Year	Country	Research Topics	Framework	Research strategy	Main Findings
Business	Zott, C., & Amit, R.	2010	UK	Conceptualisation of BM as a system of interdependent activities	M	Qualitative research	A BM can be viewed as a template of how a company conducts business, delivers value to stakeholders (e.g., the focal companies, customers, partners, etc.), and links factors and product markets. The paper discusses the activity system perspective of a BM and its role in the development of new and exciting business models for the future
Business	Schaltegger, S., Lüdeke-Freund, F., & Hansen, E. G.	2012	UK	BMI and the creation of business cases for sustainability. Proposes a framework for business model innovation	BMI	Qualitative research	Business cases for sustainability must be managed actively, introducing core sustainability requirements, such as voluntary social and environmental activities, thus improving sustainability through which a positive economic effect is created. BMI may be essential to creating a strategic leverage effect
Business	Baden-Fuller, C., & Haefliger, S.	2013	UK	The relationship between BMs and technology	BM	Qualitative research	BMIs are recipes and represent tools for management. BMs contain theories and assumptions about customer behaviour and agency that may not hold in a specific situation
Business	Boons, F., & Lüdeke-Freund, F.	2013	Netherlands	Research on sustainable innovation by adopting a BM perspective	ISBM	Qualitative research	The BM of a company is a mediator for innovations linking production and consumption and embraces stakeholders and their expectations from non-business areas. The BM perspective should be connected to already established concepts, such as corporate sustainability or sustainable innovation
Business	Boons, F., Montalvo, C., Quist, J., & Wagner, M. (2013), 45, 1–8.	2013	Netherlands	The relationships of sustainable innovation, sustainable business models (SBMs), strategy, and competitiveness	SBM	Qualitative research	SBMs provide the conceptual link between sustainable innovation and economic performance at higher system levels. A BM is an essential tool for researchers and practitioners, fostering sustainable innovation
Business	Maglio, P. P., & Spohrer, J.	2013	Netherlands	Scientific approach to advance design and innovation in service systems	BMI	Qualitative research	Service science can inform and accelerate value-proposition design by systematizing the search for adaptive advantages that improve existing offerings, create new offerings, or reconfigure the value-creating ecosystem

Level of Analysis	Authors	Year	Country	Research Topics	Framework	Research strategy	Main Findings
Business	Massa, L., Tucci, C., & Afuah, A.	2014	UK	Critical review of BM literature. Understanding the relationship between BMs and strategy	BM	Qualitative research	BM perspective is a new field because it can be derived from traditional theoretical perspectives, but it can be considered an extension of existing strategy and not a new field
Tourism	Rodríguez, I., Williams, A. M., & Hall, C. M.	2014	UK	Tourism innovation impacts the process of policy implementation, types of innovation, outcomes, and barriers	Innovation	Qualitative research	The findings suggest that any policy process is inevitably a hybrid combination of top-down and bottom-up approaches. To achieve policy outcomes, actors must be present in policy design and policy implementation combined with research across the policy domains. Tourism policies are more effective when grounded in an understanding of tourism innovation systems and targeted innovation measures that account for the different sub-sectoral demands on tourism businesses
Business	Ghicajanu et al.	2015	Netherlands	Business excellence is the associated element of this term. BMI	BM	Qualitative research	Business excellence reflects excellent practices in business, such as in management and results and focus on business innovation, customer satisfaction, human resources, vision and strategy, leadership, business ethics, sustainability in business, financial performance
Tourism	Jensen, Ø., & Prebensen, N.	2015	UK	Experience-based tourism value creation and innovation in tourism	Innovation	Qualitative research	Relevant insights into critical areas of innovation and value creation in experience-based tourism
Business	Martins, L. L., Rindova, V. P., & Greenbaum, B. E.	2015	USA	BMI using processes of generative cognition	BMI	Qualitative research	Managers should combine their schemas with knowledge available outside their companies to propose new BMs. Strategists are creative knowledge generators with the potential to disrupt industries with imaginative new BMs rather than as reactive problem solvers
Tourism/Hospitality	Souto, J. E.	2015	UK	BMI in tourism to generate sustainable competitive advantages	BMI	Qualitative research	The adoption of new models and concepts that support innovation are relevant. Innovation based on a new contextual and conceptual framework enhances competitive advantage

Level of Analysis	Authors	Year	Country	Research Topics	Framework	Research strategy	Main Findings
Business	Bocken et al.	2016	UK	Develops a framework of strategies to guide designers and business strategists in the move from a linear to a circular economy.	ISBM	Qualitative research	A list of product design strategies, business model strategies, and examples for key business decision-makers is introduced to facilitate the move to a circular economy. Proposes a future research agenda for the circular economy.
Tourism	Debarliev, S., & Prof, A.	2016	UK	A new value proposition in tourism through a BM tool	BM	Quantitative research	Using a BM tool, a tourism model of Ohrid was created, suggesting the key activities that should be undertaken and synchronised with the diverse resources: nature, cultural and historical heritage, accommodation, attractions, transport, and infrastructures.
Business	Geissdoerfer, M., Bocken, N. M. P., & Hultink, E. J.	2016	Netherlands	Brings together 'design thinking' and 'sustainable business model innovation' (ISBM) to develop sustainable value propositions and improve the business modelling process	SBM	Qualitative research	Sustainable business modelling can be enhanced by design thinking, and it was recognised as a relevant process in addressing the objectives of the value mapping tool
Business	Joyce, A., & Paquin, R. L.	2016	Netherlands	The triple-layer BM Canvas (TLBMC) tool	ISBM	Qualitative research	An expanded canvas supports developing more robust and holistic perspectives on sustainability-oriented BMI. The TLBMC has the potential to support the transformation of organizations for sustainability purposes (economic, environmental, and social)
NBT	Margaryan, L.	2016	UK	Variations in the operational setting in NBT	NBT	Mixed-method approach	Discloses the role of a commercial setting in explaining NBT supply
Tourism	Omerzel, D. G.	2016	UK	Innovation in tourism	Innovation	Qualitative research	Innovation in business, regional competitiveness, and success are essential to researchers and practitioners. Identifies the need to develop a theory on innovation in tourism
Business	Prange, C., & Schlegelmilch, B. B.	2016	UK	A comprehensive investigation of companies' innovation trajectories towards balance	Innovation	Qualitative research	Companies need to balance innovation types to increase performance
Business	Ranjith, V. K.	2016	Netherlands	Examine the inter-relationship between BMs and business strategies and multiple BMs	BM	Qualitative research	The success of a business model depends on its ability to generate revenue streams successfully over a future horizon. Multiple BMs enhance competitive advantage

Level of Analysis	Authors	Year	Country	Research Topics	Framework	Research strategy	Main Findings
Business	Schaltegger, S., Hansen, E. G., & Lüdeke-Freund, F.	2016	USA	Current research on business models for sustainability	SBM	Mixed-method approach	Organisations need to create a normative BM conducive to strong sustainability, incorporating system dynamics and the societal embeddedness of all business activities
Business	Wirtz, B. W., Pistoia, A., Ullrich, S., & Göttel, V.	2016	UK	Recent converging BM view. BM concept definition and essential components of a BM in an integrated framework	BM	Qualitative research	The compilation of the current state of BM research yields the article's main findings
NBT	Espinero, S., Orchiston, C., & Higham, J.	2017	UK	Conceptual model discussing the relationship between sustainability and resilience in tourism	SBM	Quantitative research	Evidence that resilience is considered a critical component of sustainable tourism – inherent in each social, economic, and environmental element of tourism development. Sustainability and resilience are predicated upon fundamentally different world views. Sustainable tourism can imply the absence of change, while resilience acknowledges complexity, uncertainty, and change and implies adaptation over time
Business	Evans, S., Vladimirova, D., Holgado, M., Van Fossen, K., Yang, M., Silva, E. A., & Barlow, C. Y.	2017	USA	BMI leads to better organisational, economic, environmental, and social performance	SBM	Qualitative research	Development of five propositions that frame the concept of SBMs. The paper unpacks the concept of value creation from a sustainability perspective in BMI and SBMs.
Business	Foss, N. J., & Saebi, T.	2017	USA	The last 15 years of BMI	BMI	Qualitative research	BMI literature is characterized by conceptual ambiguity and disconnected research efforts: Simplification, conceptual clarification, theoretical models, and cumulative empirical work are needed
Business	França, C. L., Broman, G., Robèrt, K. H., Basile, G., & Trygg, L.	2017	Netherlands	Framework for Strategic Sustainable Development (FSSD) and BMI and design by combining it with the Business Model Canvas (BMC) and supplementary tools, methods, and concepts, such as creativity techniques, value network mapping, life-cycle assessment, and product-service systems	BMI	Qualitative research	A new approach to BMI and design for strategic sustainable development, improving business scalability and risk avoidance. The new approach contributes to clarifying the relation between classical BM development and strategic sustainability thinking through a novel BM design for future sustainability success

Level of Analysis	Authors	Year	Country	Research Topics	Framework	Research strategy	Main Findings
Business	Geissdoerfer, M., Savaget, P., Bocken, N. M. P., & Hultink, E. J.	2017	Netherlands	The conceptual clarity by investigating the similarities, differences, and relationships between the concept of circular economy and sustainability	ISBM	Qualitative research	A conceptual development reveals the interests, motivations, and practical implications of using circular economy and sustainability in the public and private sectors. In the literature, circular economy is viewed as a condition for sustainability, a beneficial relation, or a trade-off
Business	Hossain, M.	2017	UK	A systematic literature review on BMI	BMI	Qualitative research	The current literature on BMI is somewhat fragmented, indicating dominant themes and revealing conflicting understandings. Companies place less emphasis on BMI than on product or service innovations. Top management is essential. BMI should be explored with a different approach. Sustainability is also receiving increasing attention as an element of BMI.
Business	Lüdeke-Freund & Dembek	2017	Netherlands	SBM as an emergent field of research	SBM	Qualitative research	SBM research and practice as an integrative field provides a more powerful way for making business sustainable. Methodologically intense research is necessary to achieve this goal
NBT	Margaryan, L., & Fredman, P.	2017	UK	Discussion on the general characteristics of Swedish NBT supply	NBT	Qualitative research	NBT is a highly diverse sector with significant north-south variations
Business	Massa, L., Tucci, C. L., & Afuah, A.	2017	UK	The apparent lack of agreement in the interpretation of BM and the relationship between BM and strategy	BM	Qualitative research	BM perspective is a new field, and BM research is an extension of existing strategy, not a new field
Business	Rauter, R., Jonker, J., & Baumgartner, R. J.	2017	Netherlands	BM for sustainability to better understand how they operate and what are the drivers for developing these BMs	SBM	Qualitative research	BM that incorporate sustainability aspects are not substantially different from traditional BMs. BMs should adopt specific adaptations and extensions. Company leaders should implement change processes to integrate sustainable business practices. BMs are dynamic, and sustainability plays a central role, both internally and externally
Tourism	Reinhold, S., Zach, F. J., & Krizaj, D.	2017	UK	BM in tourism	BM	Qualitative research	Identifies four emergent themes: sector-specific configurations, the role of different value types, design themes for consistency, and regulatory contingencies in tourism

Level of Analysis	Authors	Year	Country	Research Topics	Framework	Research strategy	Main Findings
Business	Wieland, H., Hartmann, N. N., & Vargo, S. L.	2017	USA	A definition for the BM concept that connects BMs to technological and market innovation	BM	Qualitative research	A service ecosystems perspective encompasses systemic, non-linear, dynamic processes. The dynamic process considers different actors who cocreate, compete, and collaborate to achieve imperfect institutional arrangements form. The systemic perspective places BMs and their development processes at the heart of the marketing discipline
Business	Yang, M., Evans, S., Vladimirova, D., & Rana, P.	2017	Netherlands	ISBM and a framework of using value uncaptured for ISBM	ISBM	Qualitative research	The identification of value uncaptured triggers the discovery of new value opportunities, leading to the innovation of the BM
Business	Andreassen, T. W., Lervik-Olsen, L., Snyder, H., Van Riel, A. C. R., Sweeney, J. C., & Van Vaerenbergh, Y.	2018	UK	The triadic T-models and value creation using T-models for three stakeholders (suppliers, companies platform, and buyers)	BMI	Qualitative research	In a T-model, value is created through several factors in addition to lower transaction costs. The paper adds that T-models will be merged with, rather than completely replacing, current M-models.
Business	Biloslavo, R., Bagnoli, C., & Edgar, D.	2018	Netherlands	SBM and interdisciplinary approaches; an eco-critical approach on the 20 most often cited BM frameworks	SBM	Qualitative research	Sustainable BM framework value triangle, which includes environmental, social, and economic sustainability dimensions
Business	Bocken, N. M. P., Schuit, C. S. C., & Kraaijenhagen, C.	2018	Netherlands	BM researched through experimentation, using a circular business experimentation framework aiming to become a sustainable business	ISBM	Qualitative research	Circular BM experimentation helps to initiate a sustainability transition in businesses
Business	Broekhuizen, T. L. J., Bakker, T., & Postma, T. J. B. M.	2018	UK	What strategic choices do business leaders make when implementing new BMs	BMI	Qualitative research	Business leaders should pay attention to the short-term benefits of BMI and the long-term consequences. Small changes in BMs can have significant effects. BM implementations are not always in line with BM literature and are influenced by organizational priorities, BM characteristics, and market developments
Business	Cosenz, F., & Noto, G.	2018	UK	The combination of conventional Business Model schemas with System Dynamics modelling	BMI	Qualitative research	Dynamic BMs provide helpful insights into strategy formulation and business venturing by capturing how critical BM elements interact to produce enduring competitive advantages over time

Level of Analysis	Authors	Year	Country	Research Topics	Framework	Research strategy	Main Findings
Business	Dentchev et al.,	2018	Netherlands	Relevant insights into SBMs, sustainability management, corporate sustainability, circular economy, business model thinking, strategic management, innovation management, and social entrepreneurship	SBM	Qualitative research	SBM is a prolific field of research. Policy preoccupations, through a multidisciplinary research perspective, improve the current understanding of SBMs
Tourism	Divisekera, S., & Nguyen, V. K.	2018	UK	Innovation processes in tourism companies in Australia	Innovation	Qualitative research	Discloses the role of various inputs and institutional factors that drive innovation efforts by tourism companies through a conceptual framework to analyse the innovation process in tourism. The results reveal that not all predicted input variables have similar impacts on innovation outputs
Business	Fjeldstad, Ø. D., & Snow, C. C.	2018	UK	Theoretical foundations of the BM concept and BM definition. Explores the relationship of BMs with the organisation design	BMI	Qualitative research	BMs are relevant to managers and organisations as they strategise, plan, and adjust. BMs should be considered a system instead of a collection of parts, able to be modified and adapted continuously according to the changing conditions. Companies must be agile in their management of both the operational and dynamic dimensions of their BMs
Business	Foss & Saebi	2018	UK	BM and BMI and their understanding through new insights	BMI	Qualitative research	BM and BMI research link the systemic view to strategic companies' actions concerning, for example, sustainability and innovation
Tourism	Gardiner, S., & Scott, N.	2018	UK	A framework to assist managers to prioritise innovation opportunities for a destination	Innovation	Mixed-methods approach	Innovation in response to scarce organisational resources, principally financial and human resources. Destination entities need to reorganise their resources and/or obtain additional resources to innovate and decide what type of innovation strategy should be adopted
Business	Geissdoerfer, M., Vladimirova, D., & Evans, S.	2018	Netherlands	The impact of the adoption of sustainable solutions and technologies in the industry on customer benefits, shareholder value, and economic growth	ISBM	Qualitative research	Through an ISBM framework, efficient and effective deployment of more sustainable solutions and technologies in the industry is achieved, generating more significant customer benefits, shareholder value, and economic growth

Level of Analysis	Authors	Year	Country	Research Topics	Framework	Research strategy	Main Findings
Business	Heikkilä, M., Bouwman, H., & Heikkilä, J.	2018	UK	Analyse how different strategic goals of SMEs relate to the BMI paths that SMEs take when improving their business	BMI	Qualitative research	Strategic goals of SMEs (start new business, growth, and profitability) lead businesses to alternative innovation ways. The findings also indicate that distinct ways lead to BM components' improvement
Business	Lahti, T., Wincent, J., & Parida, V.	2018	Switzerland	The fundamentals of a circular BM explain why a circular BM can be profitable and how it can influence competitive advantages	ISBM	Qualitative research	Companies that enter the circular economy with innovative business models to address sustainability concerns face a highly uncertain environment. Companies interested in circular or SBMs have enormous potential to improve profits and long-term competitiveness
Business	Lüdeke-Freund, F., Carroux, S., Joyce, A., Massa, L., & Breuer, H.	2018	Netherlands	A taxonomy of SBMs to understand what kinds of SBMs exist, leading to different classifications, including type	SBM	Mixed-methods approach	The proposed taxonomy allows storing, ordering, and retrieving of a large amount of information about SBMs that stems from different domains and shows different potentials in terms of solving ecological, social, and economic problems
NBT	Nasiri, Mina; Rantala, Tero; Saunila; Minna; Ukko, Juhani; Rantanen, H.	2018	Switzerland	Review the concept of sustainability and existing approaches to finding sustainable solutions for companies	SBM	Mixed-methods approach	Companies achieve sustainable solutions by identifying four different approaches for sustainable solutions: products, services, technologies, and BM
Business	Ortiz-villajos, J. M., & Sotoca, S.	2018	Netherlands	The influence of innovation on the probability of survival of 200 top British companies	Innovation	Qualitative research	Significant innovations and patent applications – particularly new processes, non-patented, and domestic ones – positively influence the probability of business survival. Companies size, international dimension, and the age of the business leader at entry seem to be the most influential ones on business survival
Tourism	Reinhold, S., Zach, F. J., & Krizaj, D.	2018	UK	State of the art of BMs in tourism	BM	Qualitative research	Reached a minimal consensus and dominant approach to conceptualising the BM concept in tourism studies
Business	Ritter, T., & Lettl, C.	2018	UK	The ambiguity about the conceptual boundaries of BMs, the applied terminology, and the potential contributions of BM research to strategic management literature	BMI	Qualitative research	Strategic management theories are connected with BM research, indicating that BM research offers a necessary, highly valuable 'connecting point' for several theories. BM research explains and enables interconnections among theories

Level of Analysis	Authors	Year	Country	Research Topics	Framework	Research strategy	Main Findings
NBT	Sahebalzamani, S., & Bertella, G.	2018	Switzerland	The understanding and operationalisation of the BM concept in NBT, mainly focusing on the extent and the way that this concept is discussed concerning sustainability-related aspects	ISBM	Qualitative research	A BM in NBT is understood and used in a limited way. Innovation is not extensively researched in NBT, where BMs adopt a static perspective
Business	Täuscher, K., & Abdelkafi, N.	2018	Netherlands	BM scalability and robustness in different environmental conditions. A simulation model integrating various dimensions of BMs for sustainability (BMfS)	SBM	Qualitative research	A conceptual model of BMfS and its relationship with its environment, sustainability, and financial performance. Understanding the link between BM and sustainability. The contribution to design-driven BM. Discusses the interdependencies between BM and growth
Business	Teece, D. J.	2018	UK	The division of BMs from strategy positioning both within the dynamic capabilities framework	BM	Qualitative research	Strong dynamic capabilities enable the creation and implementation of effective BMs. BMs should be coupled with strategies and assets that make imitation difficult. The introduction of new BMs into an existing organisation is always difficult and may require a separate organisational unit
Business	Tidd, J., & Bessant, J.	2018	Singapore	How innovation management has failed to benefit from the proliferation of relevant research fully	BMI	Qualitative research	The paper proposes a return to the more fundamental innovation knowledge bases and themes. The authors believe that this approach may better serve the needs of these changing management and policy contexts, combat the challenges faced by commercial companies, social services, and emerging economies, and contribute to achieving sustainability goals
Business	Breuer, H., Tiemann, I., Fichter, K., & Lüdeke Freund, F.	2018	Switzerland	Compilation of the most relevant theoretical works on SBM. The minimum requirements to constitute SMBs, reframing and redirecting business efforts towards sustainability	SBM	Mixed-method approach	SBM development should involve consolidation, consistency, and comprehensiveness, offering a solid theoretical foundation to promote sustainability orientation in business modelling and models

Level of Analysis	Authors	Year	Country	Research Topics	Framework	Research strategy	Main Findings
Business	Wirtz, B. W., & Daier, P.	2018	Denmark	Insights concerning the BMI process help researchers and practitioners understand this phenomenon better	BMI	Mixed-method approach	A heterogeneous structure of BMI process knowledge in the literature. The existence of several content-related and scope-related differences between existing BMI is also evident. The authors propose seven generic BMI process steps: Analysis, Ideation, Feasibility, Prototyping, Decision-making, Implementation, and Sustainability
Business	Gjerding, A. N., & Kringelum, L. B.	2019	Denmark	How inter-organisational projects can be part of a process of intra-organisational BMI in an incumbent company	BMI	Qualitative research	A new conceptualisation of BMI, linking the exploration and exploitation of business opportunities through organisational integration within value networks
Business	Pieroni, M. P. P., McAloone, T. C., & Pigosso, D. C. A.	2019	Netherlands	A review of the approaches for BMI for circular economy and/or sustainability	ISBM	Qualitative Research	BMI approaches are becoming more heterogeneous and diverge from BM Canvas. BMI approaches envisioning sustainability and circular economy principles are emerging and should include human behaviour aspects
Tourism	Pikkemaat, B., Peters, M., & Bichler, B. F.	2019	UK	A review of tourism innovation research	Innovation	Qualitative research	Small and owner-managed enterprises and family dynamics characterise the tourism industry. Further research needs to explore the effects of innovation behaviour on family companies and micro-enterprises. Sustainability is a relevant asset, and research needs to analyse the role of emerging eco-innovations and consumer-driven innovations in tourism and hospitality. Previous research does not consider the effects of policy and governance on innovations in tourism
Business	Lüdeke-Freund, F. et al.	2019	USA	A review of Business model frameworks	ISBM	Qualitative research	Identify a broad range of business model design options and propose six circular business models. Discusses different design strategies to support the development of these CEBMs.
Business	Schneider, S., & Clauss, T.	2019	USA	Business Models for Sustainability (BMfS)	SBM	Qualitative research	The creation of sustainable value and the improvement of the company's credibility as a mediator of future value creation

Chapter 3

Study II

On the relevance of sustainability and innovation in business models: The perceptions of nature-based tourism entrepreneurs, public institutions, and NGOs

Abstract

Nature-based tourism (NBT) depends directly on the availability and access to natural resources. This study seeks to understand the perceptions of NBT entrepreneurs, public institutions, and an NGO on the importance of sustainability and innovation in the business models (BM) of NBT companies and how these assets contribute to competitiveness and long-term business/resilience. An exploratory qualitative research design was used through an inductive approach to attain research objectives. Thirteen semi-structured interviews were conducted with NBT entrepreneurs, three with public institutions, and one with an NGO in Portugal, the target area of study. A content analysis was carried out on the interviewees' perceptions. The results reveal different perceptions between NBT entrepreneurs, public institutions and NGO on the topics covered. This study extends the existing body of research on NBT ISBMs by confronting entrepreneurs, public institutions and NGO perceptions of sustainability and innovation and their role in long-term business/resilience and competitiveness in NBT. It proposes a framework for an innovative sustainable business model (ISBM) for NBT, in line with the UN SDGs, where the 5Ps (Planet, People, Partnership, Prosperity, Peace) support the value proposition, value capture, value creation and value delivery.

Keywords: Nature-based tourism, Sustainable development, Innovation, Sustainable business model, Resilience

1. Introduction

Nature-based tourism (NBT) incorporates nature as a service provider on the one hand and nature as a product that is marketed by suppliers and consumed and experienced by tourists on the other (Fredman et al., 2012).

According to Margaryan (2017), NBT occurs where the degree of human activity is relatively low. Companies that promote NBT are generally small and family-underpinned businesses (Rønningen, 2010), showing fragile performance and poor competitiveness (Jensen & Prebensen, 2015). However, improving the performance and competitiveness of NBT companies can be achieved by introducing innovative and entrepreneurial initiatives (Nybakk & Hansen, 2008; Rodríguez et al., 2014). In turn, the introduction of innovative practices boosts business sustainability, particularly in terms of social and environmental well-being and sustained economic growth (Reinhold et al., 2017). The above considers the existence of business models explicitly developed and adopted by companies or, as in other situations, implicitly perceived business models (Biloslavo et al., 2018).

BMs can be considered interdisciplinary instruments that integrate the dimensions of sustainability, namely the environment, the economy, and the socio-cultural dimension (Biloslavo et al., 2018). The relevance of adopting innovative and sustainable initiatives in business models and their impact on companies' performance is acknowledged (Breuer et al., 2018; Biloslavo et al., 2018). In addition, Business Models Innovation (BMI) contribute positively to creating and capturing value and customer communication (Andreassen et al., 2018). However, few studies on business models in NBT address innovation and sustainability in their various dimensions (Reinhold et al., 2017).

Although, introducing innovation in BMs restructures company operations and requires knowledge and skills often lacking in small family and rural businesses (Omerzel, 2016). Moreover, it is confirmed that NBT entrepreneurs express a lack of "sustainability literacy", where social and environmental dimensions are often ignored in their business models (BM) (Biloslavo et al., 2018).

Thus, this study looks at an emerging area of research related to the business models of NBT companies, namely innovative sustainable business models (ISBM) for NBT companies

(Geissdoerfer et al., 2018), from an integrated perspective of innovation and sustainability at the economic, environmental, and socio-cultural levels.

To fill these research gaps, the present study sought to understand NBT entrepreneurs', public institutions, and non-governmental organisations' (NGO) perceptions of sustainability and innovation in BMs in Portugal. Portuguese NBT companies are the target of this study. Portugal is a small European country on the western side of the Iberian Peninsula, offering a beautiful coastline and rich history. From a tourism point of view, Portugal benefits significantly from its natural assets, landscapes, climate, gastronomy, wines, outdoor activities, and exclusive experiences, which vary considerably from one region to another.

Our study aims are: (1) to understand the perceptions of nature-based tourism companies on sustainability, innovation, competitive advantage, long-term business/ resilience, and their role in their business models; (2) to understand the vision of public institutions and the NGO on sustainability, innovation, competitiveness and long-term business in nature-based tourism business models; (3) to typify nature-based tourism companies; (4) to understand how far current nature-based tourism business models embed sustainable management initiatives and innovation; (5) understand how their business models align with sustainable development and with an ideal innovative sustainable business model. Additionally, we propose an ISBM framework for NBT companies.

To reach our purpose, we delivered seventeen semi-structured interviews with thirteen NBT entrepreneurs, one NGO, and three Portuguese public institutions.

This study is structured as follows. The next sections offer an overview of the NBT concept and sustainable development, innovation, and sustainability in BMs. The methodology contains an overview of the research context (i.e., NBT companies in Portugal) and research methods applied in this study. The results describe the significant findings of the content analysis. We finalise this study by exposing some conclusions, the framework proposal, managerial implications, limitations, and avenues for future research.

2. Theoretical background

2.1. Nature-based tourism and sustainable development

Environmental assets are vital in supporting economies and NBT, which depends directly on ecosystems' conservation state (Pagiola et al., 2004). Entrepreneurs are also responsible for preserving and sustainably managing natural resources and enhancing competitiveness through ecosystem services and conservation actions (Bishop et al., 2009). The ecosystem services are essential for promoting NBT destinations and positively influence the annual number of visitors by 35% (Chung et al., 2018).

Fredman et al. (2009) defined NBT as "... human activities occurring when visiting nature areas outside the person's ordinary neighbourhood" (as cited in Fredman & Tyrväinen, 2010, p.181). Other definitions of NBT appraise recreation and adventure (Wall-Reinius & Grundén, 2012) or NBT as a cultural service provider contributing to public awareness and financial support for biodiversity conservation (Steven et al., 2013). NBT definitions considering NBT as a branch of tourism dealing with selling nature through nature-related experiences were also founded (Margaryan, 2017). NBT is often recognised as a regional developer, diversifying the rural-based economy (Margaryan & Fredman, 2017; Fossgard & Stensland, 2020).

Portugal is a southern European country in the Iberian Peninsula, which offers a wide range of natural areas, such as national parks, natural reserves, natural monuments, and protected landscapes, hosting relevant and unique fauna and flora. The Portuguese National Nature Tourism Program (2015) and the trademark Natural.PT established NBT as an integrated practice of diversified activities. Nature-PT considers NBT the enjoyment of the natural environment in its various forms in classified areas, promoting tourism development, enhancing natural and cultural heritage, and catalysing local and regional development. Accordingly, companies are responsible for identifying and organising all the resources related to experiences (Fossgard & Stensland, 2020). Moreover, the tourism sector must work for everyone, encompassing sustainability and innovation towards an inclusive and resilient sector (UNWTO, 2022).

Initiatives related to sustainable development and tourism are the basis for an urgent paradigm shift in tourism in line with tourists' expectations (UNWTO, n.d.). The Earth Summit in Rio de Janeiro in 1992 extended the concept of sustainable development to Tourism, introducing the concept of sustainable tourism as part of the global sustainable development concept on Agenda 21 for the Travel and Tourism Industry (Hardy et al., 2002). Accordingly, scholars refer to sustainable tourism as a goal that all tourism should achieve (Clarke, 1997; Lu & Nepal, 2009; Torres-Delgado & Palomeque, 2012). The United Nations Sustainable Development Goals (UN SDGs) reveal an economic and resource conservation perspective. Sustainability underlies all companies, directly or indirectly, but the interpretation of sustainability differs (Lankoski, 2016). Sustainable tourism looks for "Tourism that takes full account of its current and future economic, social and environmental impacts, addressing the visitors' needs, the industry, the environment, and host communities" (UNWTO, n.d.; Bramwell et al., 2017) defending sustainable tourism as an economic activity promoting the exchange between different goals more than the balance among them. Researchers discuss the concept of sustainability as a balanced combination of economic, environmental, and social dimensions (Geissdoerfer et al., 2018; Breuer et al., 2018). It is difficult to introduce the concept of sustainable development in NBT as it impacts nature (Butler, 1999). Tourism impacts and is affected by the environment, and companies should engage in long-term planning to improve economic benefits, local well-being, environmental protection, and tourist experiences (Zolfani et al., 2015). NBT's long-term business encompasses resilience, a relevant asset for sustainability (Espiner et al., 2017). Nevertheless, sustainable behaviour and the underlying meaning of sustainability in tourism are discrepant, where discourses and actions do not coincide (Pope et al., 2017). Sustainable tourism innovation research contributes significantly to population well-being and environmental and economic improvement (Nunkoo et al., 2019). Thirty years after adopting the concept of sustainable tourism, there remains the need to develop innovative products, services, destination management (Lane, 2017), and the settlement of measurement indicators (Butler, 1999; Lu & Nepal, 2009; Agyeiwaah et al., 2017; Kristjánsdóttir et al., 2017).

2.2. Innovation and Sustainability in Business Models

After years of research on BMs, there is no consensus on their definition (Cosenz & Noto, 2018; Ritter & Lettl, 2018). BMs are dynamic, with an implicit significance in practice and academic research, and are used inconsistently (Wirtz et al., 2016). BM is a set of distinct elements (Magretta, 2002; Schneider & Clauss, 2019) used interchangeably as a strategy (Shafer et al., 2005). BM “is a description of an organisation and how that organisation functions in achieving its goals (e.g., profitability, growth, social impact...)” (Massa et al., 2014, p. 2). Boons and Lüdeke-Freund (2013) propose BMs as mediators for innovations, embedding the principles for sustainable business models. Companies’ BM mediates innovations, linking production, consumption, and stakeholders’ expectations, embedding sustainable business model (SBM) principles (Boons & Lüdeke-Freund, 2013). Innovation in BM drives companies to redesign the existing BM (Omerzel, 2016), introduces internal reorganisation and business strategy (Souto, 2015), and compels NBT companies to implement sweeping changes (Jensen & Prebensen, 2015). Innovation contributes to competitive advantage and companies’ market entrance, particularly in emerging economies (Omerzel, 2016; Massa et al., 2017; Breuer et al., 2018; Teece, 2018). Innovation promotes inclusiveness, efficient resource management, and local community empowerment (UNWTO, n. d.). Business Model Innovation (BMI) innovation links strategic goals with the existing BM (Heikkilä et al., 2018; Fjeldstad & Snow, 2018), combines a modifier concept, the current BM scheme (Martins et al., 2015), and can be imitated by others (Teece, 2018). In 2005, Osterwalder defined BMI as “specifying a set of model elements and building blocks, and their relationships to one another (...) a business model designer (...) can experiment with these blocks and create completely new business models, limited only by imagination and the pieces supplied” (p. 24). Osterwalder et al. (2010) innovated on BM through a canvas map, introducing a new BM perspective. In their canvas, Osterwalder et al. (2010) innovate by mapping key activities and introducing the concept of sustainability. Other canvases emerged, such as a triple bottom line canvas (Joyce & Paquin, 2016) or an SBM (Bocken et al., 2018).

Foss and Saebi (2017) defined BMI as “designed, novel, and nontrivial changes to the key elements of a companies’ BM and the architecture linking these elements” (p.216). But the lack of reliable and efficient methods to develop BMI (He & Ortiz, 2021) can determine its failure (Geissdoerfer et al., 2018). BMI associated to customers’ sustainable value proposition

enhances competitive advantage and internal sustainability (Chesbrough, 2010; Boons & Lüdeke-Freund, 2013; Boons et al., 2013; Souto, 2015; Geissdoerfer et al., 2018).

The introduction of a sustainable design in BMI means a complete transformation of companies' BM (Stubbs & Cocklin, 2008), as it reduces business risk, enhances sustainable strategic development (França et al., 2017), and emphasises sustainable value (Yang et al., 2017). Considering that companies are forced to be sustainable (Joyce & Paquin, 2016), BMI introduces a holistic perspective by incorporating the three dimensions of sustainability (Bocken et al., 2013), frequently connected with new technologies (Andreassen et al., 2018). Integrating sustainability in BM requires previous BM adaptation (Schaltegger et al., 2012) and contributes to the companies' Sustainable Business Models (SBM) improvement (Joyce & Paquin, 2016; Biloslavo et al., 2018). Moreover, developing SBMs allow the systematisation of dispersed knowledge and enable the creation of knowledge for action, meaning sustainable organisations (Breuer & Massa, 2019), and companies' sustainability orientation (Breuer et al., 2018). Adopting a dynamic perspective of a SBM (Rauter et al., 2017), companies are committed to facing environmental, economic, and social challenges (Evans et al., 2017). Nevertheless, it is important to stress that many businesses, especially smaller, family-owned ones, reveal a lack of management skills and knowledge gaps in terms of sustainability. (Biloslavo et al., 2018).

It remains a research gap related to the appropriate design for an SBM (Täuscher & Abdelkafi, 2018; Geissdoerfer et al., 2017) and on the introduction of sustainability dimensions in BM (Biloslavo et al., 2018). Schaltegger et al. (2016) defined SBM as a tool that “helps to describe, analyse, manage, and communicate (i) a company's sustainable value proposition to its customers, and all other stakeholders, (ii) how it creates and delivers this value, (iii) and how it captures economic value while maintaining or regenerating natural, social, and economic capital beyond its organisational boundaries” (p. 268).

The impacts of tourism on the environment, economy, and socio-cultural level require sustainable solutions (Presenza, 2019). Developing SBM may involve companies' top management and are subject to profit uncertainty (Lahti, 2018). Bocken et al., (2014) argued the relevance of innovation in ISBM “models that create significant positive impact and significantly reduced negative impacts for the environment and society, through changes in the way the organisation and its value-network create, deliver value and capture value (i.e., create economic value) or change their value propositions” (p. 44).

The association of sustainability and innovation in BMs contributes to companies' competitive advantage and long-term business (Pieroni et al., 2019), reduces risk, and minimises the use of resources and the uncertainty of value capture and value creation (Bocken et al., 2018). Competitive advantage is an asset in tourism destinations, where BM is a determinant in communicating distinct and unique experiences (Debarliev & Prof, 2016). Reinhold et al. (2017) propose a common conceptual basis and relevant knowledge for the study of BM in tourism research, moving from existing BM to emerging BM configurations in tourism. Boons & Lüdeke-Freund (2013) suggested innovative sustainable business models (ISBM), which must be ecologically robust and economically sustainable (Täuscher & Abdelkafi, 2018).

Adopting a ISBM highlights companies' design principles and value-creation activities, enhances sustainable value and reliability, and provides the best solution to customers and for the company (Lüdeke-Freund et al., 2018; Schneider & Clauss, 2019). Companies' sustainability commitment can be expressed through cooperative sustainability and sustainable innovation (Boons & Lüdeke-Freund, 2013; Rantala et al., 2018). Additionally, Geissdoerfer et al. (2016) proposed that a "sustainable business innovation process specifically aims at incorporating sustainable value and a pro-active management of a broad range of stakeholders into the business model" (p.1220).

Improving BM research in tourism (Reinhold et al., 2017a), on BM for NBT and design-implementation on ISBM (Geissdoerfer et al., 2018), and the introduction of alternative management actions and innovation (Cosenz & Noto, 2018), goes beyond economic and financial dimensions. These actions enhance BM research and sustainability dimensions such as environment, socio-cultural and corporate sustainability (Bocken et al., 2014; Lüdeke-Freund & Dembek, 2017; Schaltegger et al., 2016).

3. Methodology

3.1. Research context

Nature-based Tourism is very attractive on short breaks or vacations. Additionally, it includes a wide range of possibilities to be developed directly in natural areas or contact with nature and its surroundings, such as accommodation in rural and protected areas or the development of

activities in nature, such as walks, bird watching, sports in nature, whale watching and dolphin watching activities, environmental education embedded into tourism activities, among others. Nature-based Tourism complements conventional bed and breakfast tourism, providing countryside experiences in protected or unprotected areas, reconnecting with nature, fresh air, silence, landscapes, gastronomy, and local cultures.

Portugal, according to the Instituto da Conservação da Natureza (ICNF), has 30 tourist companies recognised as nature tourism in July 2023, divided into residential tourism (1), country houses (23), camping and caravan parks (3), tourist villages (1), hotel (1) and rural hotel (1). The number of tourism companies offering NBT services is substantially higher in Portugal. However, the majority do not submit to be classified as NBT companies, asserting that the process is too bureaucratic and expensive. Therefore, other tourism companies also provide nature tourism offers, referred to as Tourism Animation companies. Ten thousand nine hundred fifty-two companies were recognised as Tourism Animation companies on 07th July 2023. Tourism Animation companies offer not only guided tours but visits to museums, extreme activities, surfing, and yoga, among a lot of other activities with tourists, such as NBT experiences ranging from trekking, bird watching, dolphin and whale watching, horse riding, wine tourism, bicycle tours, and hunting.

Focusing on NBT managers' perceptions of sustainability and innovation in long-term business/ resilience and competitive advantage in NBT is of the utmost importance.

3.2. Methods

This section details the methodology adopted to collect the data using an exploratory qualitative research design. Additionally, an inductive approach was used to attain the research objectives. A qualitative analysis was performed through a rigorous approach of data collection, data analysis, and written reporting, where the authors validate the accuracy of findings using validation procedures, such as interviews' listening, transcription and reading and website data triangulation (Creswell, 2007). The methodology used in this study aims to match objectives and goals without distorting the facts (Ghiglione & Matalon, 2001). Therefore, this study's approach comprises different steps. The first step encompasses the country's division into four regions (i.e., North, Centre, South, and Algarve) to ensure companies' representativeness. The second step consisted of the inventory of NBT companies, conducted by consulting the entities'

websites responsible for licensing NBT companies. Purposive sampling was used to make the selected sample relevant to the research questions and the study's goals (Bryman, 2012). Finally, we analysed the selected companies providing NBT products and operating for at least five years.

The selection of the NBT companies considered two aspects: the activity developed and the contents of each website. Relevant data on companies' websites were gathered, providing a comprehensive overview of the companies adopting sustainable and innovative measures, their commitment to long-term business, resilient business, and competitiveness. This exercise identified thirty-one companies certified as NBT, and forty-five offering NBT experiences in Portugal. All companies certified as NBT in Portugal (thirty-one) and those offering NBT experiences were invited to participate in the interview process. However, only one certified company, coded as E11, accepted the interview challenge, and regarding the companies that offered NBT experiences, only twelve entrepreneurs responded positively to our contact to be interviewed. Entrepreneurs specialised in glamping, surfing, extreme activities, and wildlife tourism, such as hunting, did not respond to our solicitation. The entrepreneurs' interviews were conducted face-to-face (eight) or via Skype (five). One NGO and three public institutions with responsibilities in tourism were also invited to participate in the research. As a result, the sample includes one NGO face-to-face interview and three public tourism entities- one was a Skype interview and two face-to-face interviews. Table 1 represents the distribution of interviews by activity.

Table 3.1. Interview participants by activity (Author's elaboration)

Interviewed Entities	<i>N</i>	<i>%</i>
<i>NBT Certified Company</i>	1	5.9
<i>Other Companies offering NBT experiences/accommodation</i>	12	70.6
<i>Public Institutions</i>	3	17.6
<i>NGO</i>	1	5.9

Considering the interviewees, ten of the interviewees are property owners, classified as (E01, E03, E04, E05, E06, E07, E09, E11, E12 and E13), two are marketing managers (E2, E10) and one is a general manager, coded as E8. Table 2 summarises the interviewees by activity,

location, gender, and number of employees. Entrepreneurs' companies E01, E05, E09, E10, E11, and E12 offer accommodation and nature tourism activities on the property or in partnership with local partners. The company of the entrepreneur E11 is a unique company certified as NBT. Entrepreneurs E02 and E03 offer horse riding experiences; E04 offers dolphin watching; E06 offers walks in nature; E07 offers birdwatching; E08 offers wine tourism; E13 offers walks; The NGO coded as E14 offers general nature activities associated with nature conservation. Concerning the three public institutions, E15 is an association of tourism entrepreneurs, E16 is responsible for tourism in Portugal, and E17 is accountable for biodiversity, nature conservation, and NBT certification.

The number of the companies' employees included in the study varies between two and fifteen. For example, 58.8% of the companies have two to five employees, and 41.2% between eight and fifteen employees. Some companies offering accommodation have a considerable number of employees, as evidenced in Table 2. We emphasise that the owner is also an employee. Companies offering only NBT activities are smaller and have fewer employees. Considering birdwatching companies, these entrepreneurs are predominantly amateur ornithologists with a passion for birds who decided to go into NBT businesses alone and hire one or two guides. Trekking and nature tours are very small companies with at most two persons, one of them being the owner. Other Nature-based Tourism (NBT) businesses provide maritime tourism experiences such as dolphin watching and horseback riding, joining family members, and supporting equipment acquisitions.

Table 3.2. Summary of the profile of the interviewees by activity, location, and number of employees (Author's elaboration)

Entrepreneurs/Entities	Activity	Region	Employees
E01	Accommodation- nature experiences; sustainable tourism	Centre	8
E02	Horseback Riding on the beach	South	4
E03	Horseback Riding on the beach and other natural areas	South	3
E04	Whale and dolphin watching; Heritage visits	South	5
E05	Accommodation- nature experiences	Centre	4
E06	Hiking in nature; gastronomic and wine experiences; religious tourism	North	3
E07	Bird watching	Centre	4
E08	Accommodation; nature experiences; gastronomic and wine experiences	North	4
E09	Accommodation nature experiences; sustainable tourism	Centre	5
E10	Accommodation; nature experiences; gastronomic and wine experiences; sustainable tourism	South	15
E11	Accommodation; nature experiences; gastronomic and wine experiences; sustainable tourism; environmental education	South	2
E12	Accommodation; nature experiences; gastronomic and wine experiences; sustainable tourism; environmental education; nature conservation	Centre	10
E13	Pedestrian walks- geology observation; nature experiences	South	2
E14	ONG-Nature conservation, landscape and territory planning	North	>10
E15	Public Institution- Tourism Management	Lisbon	>30
E16	Public Institution - Tourism Management	Lisbon	>100
E17	Public Institution - Nature management; Biodiversity conservation	Lisbon	>1000

The interviewees' ages vary between thirty-five and sixty, as shown in Figure 1. Figure 2 considers the interviewees' gender, where twelve (70.6%) are men, and five (29.4%) are women.

Figure 3.1. Distribution of the age of the interviewees (Author's elaboration)

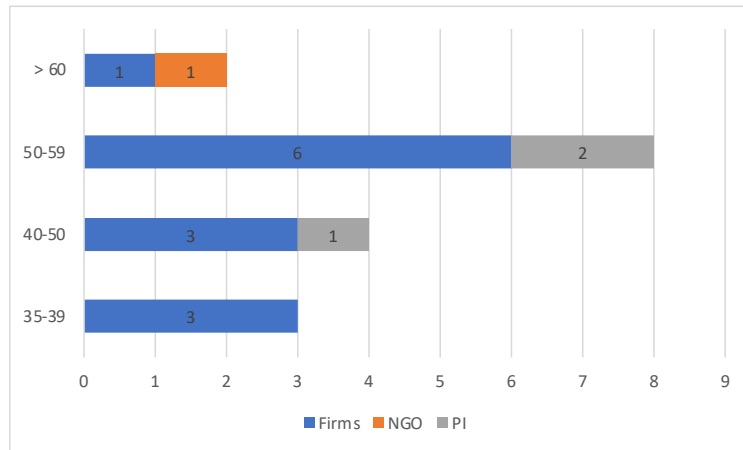
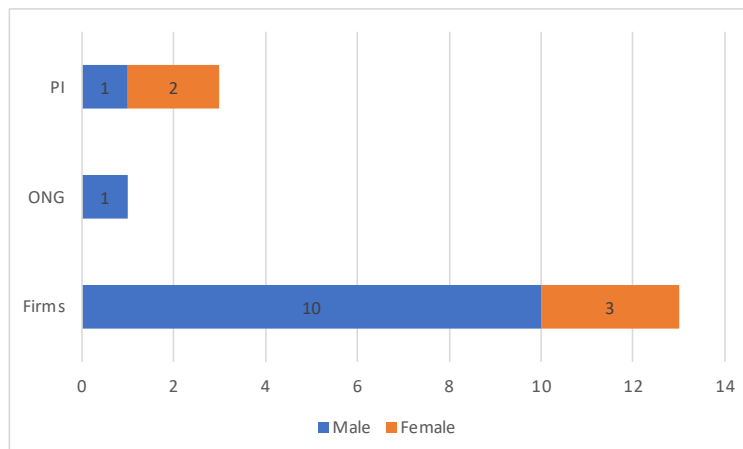


Figure 3.2. Interviewees gender disaggregation (Author's elaboration)



An interview is an active process where the interviewer and interviewee, through their relationship, produce knowledge (Creswell, 2007). Seventeen semi-structured interviews with entrepreneurs and public institutions with responsibilities in tourism were delivered (i.e. five in the Center Region, four in the South Region-Alentejo, two in Algarve, and two in the North Region of Portugal, three in public tourism entities, and one Non-Governmental Organisation (NGO).

Semi-structured interviews were used to collect primary data, considering that semi-structured interviews are flexible, allowing the interviewer to ask more questions and achieve rich, detailed answers (Bryman, 2012). An interview guide was developed and organised to ensure

the data quality collected. The interview questions (Annex I of this study) align with the study's aim and cover the following topics: general information about company characteristics, the main markets for each company, the role of sustainability and innovation on NBT companies' long-term business, resilience, and competitive advantage. At the end of the interview, managers could speak about other topics not explored.

The semi-structured interviews were recorded and transcribed, allowing a systematic approach through coding (Bryman, 2012). Adopting qualitative research, we aim to contribute to research authenticity, trustworthiness, and credibility (Creswell, 2014). A narrative analysis followed Bryman (2012) focusing on how entrepreneurs are aware of the importance of introducing a sustainable and innovative management model in NBT companies to achieve competitive advantage and promote long-term/resilient businesses.

The interviews' responses allowed us to identify how NBT companies' BMs deviate from an ideal ISBM. Furthermore, the narrative analysis enabled us to understand different perceptions between respondents from NBT companies, public entities, and NGO.

4. Results

4.1. Content analysis

The 17 semi-structured interviews allowed to obtain essential information and conduct a narrative analysis of the contents collected through NBT entrepreneurs, the NGO, and Portuguese Public Institutions. The interviewees commented on the identified key drivers of an ISBM: sustainability, innovation, long-term/resilient business, and competitive advantage in NBT business. However, the narrative analysis was conducted separately as NBT entrepreneurs, NGO, and public institutions have distinct visions on the same subjects.

4.1.1 Company entrepreneurs' perceptions

Sustainability

The interviewees considered all the sustainability dimensions, mainly focusing on the environmental dimension of sustainability rather than the sociocultural and economic

dimensions. They reveal a sense of urgency to act on deforestation, water pollution and nature carrying capacity. The interviewed entrepreneurs showed awareness of adopting environmentally sustainable practices through efficiency improvement and reducing environmental impacts, such as reducing energy consumption and waste production.

The respondents focus particularly on the environmental dimension of sustainability, (1) asserting “nature” a primary element - “nature is our basic element, always respecting the vegetation around each house, we only use typical plants, we always respect all the surroundings, we don’t put fences or walls on the houses to delimit the land”. (2) It is also underlined NBT on nature and natural resources conservation - “nature is fundamental, we manage to maintain, look after, take care of all the environment, nature supports our activity”, “our activity can help preserve natural resources, without a doubt, for example, what we are doing on the estate where we have reforested 55 hectares of new cork oaks, corresponding to 27 000 trees, we have a completely organic and biological agriculture, where we do not allow any species other than native ones to be planted, and where in 400 hectares there is not a single piece of paper on the ground, not a single plastic”, “ in our project we don’t have automatic irrigation systems, because we simply don’t need them, because our plants have the potential to survive in those conditions and so we don’t need irrigation systems”, “ we are in a region where we can afford to say that some species can still be found and we have environments and landscapes well preserved and be in contact with wild nature”. (3) NBT is considered as nature sponsors “from next year onwards we will go one step further and in all our tours a part, which varies between 3 to 5%, will go directly to nature conservation”, “the property has about 8 hectares and nature is part of the attractions, we have a reserved area, we call the forest of the future, where we are recovering about 4 hectares”, “the focus is always on promoting biodiversity, our biological pool, the herons that go there and eat frogs, the dragonflies, the frogs themselves, they have a favored environment”. (4) However, NBT is also considered as nature career - “ we always carry a bag to collect plastic during the visits”, “everything we do is connected with nature, the grapes production, the preservation of nature itself, planting and creating biological corridors”, “this concept of sustainability, we try to implement and preserve the natural resources, whether water or solar, they are implemented and are increasingly being expanded”, “the conservation of natural resources is very important, it is fundamental because these resources sustain the activity, if there are no resources we will not be selling tours”.

Respondents also consider the socio-cultural dimension of sustainability. NBT tradition revival -“In the countryside we can expect more regional products, traditional sausages, honey that is produced there”, “the architecture, the whole construction process and the choice of materials, we build a few huts on the river, the idea of the huts on the river is exactly to replicate the life of a fisherman by the river and how he lives”, “reconcile a rigorous heritage restoration with all the conditions of comfort and habitability that a tourist unit needs”. “Our motivations were somehow to contribute to the preservation of the “Saloia¹” culture, the identity of the region, the rehabilitation of a heritage that practically disappeared in the last decades”, “our cuisine is based in the Alentejo gastronomy traditions”, “all the materials used in the building restoration were produced following the same ancient procedures”.

NBT business contributions for the economic dimension of sustainability in regional development is also considered – “obviously these things cannot be massified”. I have friends who ask me that if I’m so successful with six rooms, why can’t I do it for 100 rooms? I don’t do it because I can’t”, “economic rationale is not our number one factor, we are concerned that things have to be economically sustainable but that is not the number one factor”, “I would say that hotels, restaurants, reduced seasonality, they are serving breakfast earlier, having a menu with some vegetarian dishes”, “we have partnerships with local companies, providing a more complete experience, offering yoga classes in our space, massages, walks in the Serra da Estrela, photo workshops in our space (nature photography), and horse riding”, “we already had the family horses, my father started breeding horses and I looked at it from the perspective of telling my father that it was very funny to have horses, but either the horses would become profitable and pay the bills or we would have to give up horses, or just have 4 or 5 horses”, “many people come here for a horse ride and besides the ride they sleep in the area, have lunch, dinner and at least stay here for 48 hours and end up spending money here”, “when we take tourists to a place, we try to plan the visit according with the local facilities, for example a coffee, where our clients can use the facilities and pay for that”, “our main objective was not make money, but attracting people, sharing our experiences and improving peoples’ life”, “maintain this heritage and somehow make it profitable so that we can look after it for the next generations to come”.

¹ It means country inhabitant, as opposed to city inhabitant, and originally referred to the rustics of the Lisbon area

Innovation

The entrepreneurs considered innovation a critical factor in their business, mentioning a permanent need to evolve continuously to reach customers' needs, differentiate from competitors, minimise environmental impact, reduce operational costs and promote sustainability.

Entrepreneurs reported innovation as a new way of providing services - "we have a very limited offer, we believe very much in our product, we don't have clients, we only have guests and at table dinners we have guests," "we treat people like long-time friends or a distant relative and the whole concept of service is designed from there, in a very genuine way and real way", "every six months we do innovation workshops, and basically we plan everything from anthropology and sociology to understand the needs of our guests", "I believe only in people centred innovation, centred on the user, I don't believe in innovation based on a strictly creative basis", "we want to have a more personalised approach, very directed to the guest, because we consider that this is the best way to bring new guests and to guarantee return visits", "we work essentially under the co-creation concept"; "we study the circadian rhythm of the guests providing experiences that they can replicate later in their lives, we try to look after them as best as possible and ideally when they leave in a better condition, physically and spiritually", "we prepare different things for different people at the table, each person should be treated differently".

Innovation is frequently associated with technology - "we record our bird observations on mobile APPs, such as the iBird APP".

Innovation is used to raise awareness, "we are always looking to overcome ourselves, to find creative solutions; this is related to the events we organise here, like environmental training and the introduction of the concept of Soul Tourism." "I think the important thing is that the horses are trained and calm so that we can get a person who has never ridden a horse; I think this is innovative in that sense"; "We publish books; in 2009, we published a book about the dolphin population, and last year we published one about the Sado Estuary, so we are creative and innovative".

Innovation means evolution - "for us, innovation is transversal to the different areas of the company, and I would say that it is perhaps one of the most important things that we value, at the production and the management level and in tourism"; "innovation is what makes us stay

ahead of the competition, through promotion and the products we create, also regarding the quality of the service we provide”, “using the best practices that are used abroad, being as up-to-date as possible.”

Long-term-business/Resilience

Entrepreneurs consider long-term business and resilience relevant to their NBT business. The interviewees reveal the need to adapt their businesses, enhance sustainable growth and engage with local communities to build resilient businesses.

There is a particular interest to develop long-term and resilient business - “we have a relatively small country and therefore we have to do exceptional things, to distinguish ourselves by absolutely exceptional things and maintain this interest and enhance quality, distinguish ourselves by quality and not by filling ourselves with projects that are all similar to each other”, “our projects are a different way of looking after the heritage for a future generation, it’s this idea of things passing by, it’s like for example the case of a beautiful watch collection that passes from generation to another generation, and really has more and more interest and that’s the way we do things”, “I only see it this way and that is why I believe that it is worth taking decisions that are long-term and are not merely occasional decisions”, “this project is already 20 years old and we want to operate for many more years”, “it is essential because we are talking about people who make a living here and they have to feel our commitment to making this a business for life”; “That’s the most important thing, running the business for as long as we can”, “for me the key word is resilience, there is no doubt about it”.

Competitive advantage

The interviewees consider competitive advantage as critical to their business success. Entrepreneurs mentioned that competitive advantage is enhanced by offering exclusive experiences, unique natural attractions, implementing sustainable practices, and delivering excellent customer services and fair prices.

The competitive advantage is considered a differentiating factor of the offer - “when someone arrives and sees, feels, and senses the project for the first time that it may bring back very distant memories as a child, or a story they were told of a fishermen’s hut that existed”, “the accuracy

we apply to the rehabilitation of our houses means that we appear on the market with a highly differentiated product, and in fact there is a market that is sensitive to this accuracy that we wanted to preserve”, “to be honest, the simplest things, they don’t have to be exuberant, they don’t have to be spectacular, it is what best identifies us from other regions”, “what we do here is to remain true to ourselves, to remain faithful to the identity of the Saloia region and to provide a quality experience regarding living conditions and service”, “the recovery of the heritage that we did here, the service we offer and the quality of the landscape and services, these are the three main differentiators, I think these are the reasons for our success”, “We do not to sell beds, we want to increase people’s experience, it is essentially more about serving than being served, about giving more than receiving”.

Short-distance places are denoted as competitive in NBT business - “You land in Lisbon and 20 minutes you are seeing thousands of flamingos, ducks and other birds, in the Tagus river and at the Sado estuaries,” “half an hour from Lisbon, surprisingly, there is still a place well preserved as this is, with waterfalls, an abandoned village, they get good air, they do not waste time travelling, because in half an hour tourists get here and on Sunday if we are not fully booked, we tell people to check out later, and sometimes they leave at 8.00 PM and the weekend tastes extra; these reasons explain why we have many repetitors, not only Portuguese but also foreigners”.

Service quality is considered a driver of competitiveness - “my guides are the best Portuguese guides, not because they work for me in my company, but because we invest a lot in guides with a specific profile and training”, “We do everything so that people have a good experience when they come here, we do everything so that our tours have, in a simplistic way, the best quality possible because these people will be our ambassadors”, “nature is determinant, the quality of the team is essential, we are all aligned and focused on our purpose on delivering our value proposition consistently”, “it is fundamental to invest a lot in service quality”.

Protected Areas contribute to competitive advantage - “The existence of a Natural Park brings beauty to the walk; if this area were full of houses, it would not be so beautiful”, “Obviously being on the river, in a region classified by the UNESCO, the house is right on the river, the landscape, the organic farm production and all this attention to nature, we feel that it is a differentiating element and that visitors value It, so I believe this is where we are heading”, “we were pioneers because we created a new product on the Sado Estuary Nature Reserve, based on respect for nature”.

Competitive advantage is frequently associated with authenticity - “one of the villages with its identity still intact”, “we still keep the identity here in the region, I think the council is doing a good job”, “we have several Menhirs, the Mennir of Bulhoa (or Menhir of Abelhoa), Menhir of Outeiro and the Cromlech of Xerez (Monsaraz”, “Algarve has a range of about 400 million years of Earth’s history that is recorded in the rocks”.

4.1.2 Public Institutions and NGO Perceptions

Sustainability

Both public institutions and NGO recognise the importance of sustainability in NBT. Public institutions, such as nature conservation institution and tourism boards, prioritise the economic benefits of tourism and the preservation of natural resources. They understand NBT as generating revenue while benefiting local communities. Public institutions and NGO disagree on NBT promoting conservation and responsible stewardship of natural resources.

Public institutions and the NGO reported sustainability as a determinant asset for NBT - “NBT companies should be sensitive, to introduce environmental, economic and social measures, which are not evident”, “NBT should preserve natural resources”, “NBT entrepreneurs must notice a direct impact of their activity on natural values, when we show them numbers”, “finding the true paths and balances and the definition of the carrying capacity”, “we are talking about a growth in recent years of 40%, there is no activity that is growing like this, and this is unsustainable”.

NBT is frequently associated with social benefits and better salaries - “I would say that in NBT people have better salaries”, and “employee’s qualifications should be recognised with higher salaries”.

Limited entrepreneurs’ qualifications impact the sustainability of NBT business - “we have many challenges regarding people’s qualifications”, “lack of human resources to work in NBT”, “the capacity of hotel schools to train people for the tourism sector”, “it will take years to get the top managers of these micro, small, medium and large companies to be involved in training processes”, “NBT guides must have appropriate training”.

NBT sustainability is constrained by several factors - “some municipalities are developing strategies in an isolated way”, “operators are very few and weak”, “local councils promote a

territory, but the territory is not a tourism product”, “they sell a territory without any product”, “better management and relationship between NBT and the Protected Areas in nature conservation”.

NBT is frequently associated with entrepreneurs’ bad behaviour and is therefore considered a non-sustainable activity - “always that fear of the entrepreneur who is a villain and will destroy” and “legislation should not inhibit investment”.

Public institutions help companies succeed - “Our stance is not to deregulate but to find the true paths and balances.”

Innovation

Public institutions and NGO mentioned that innovation increases visitor numbers, revenue, and tourism’s overall economic impact. This approach includes the introduction of new attractions or activities, the development of sustainable infrastructure, or the use of new technologies to enhance the visitor experience. All the entities consider innovation as addressing environmental and social challenges, such as climate change, by promoting low-carbon tourism and supporting local communities.

Public institutions and the NGO perceive innovation on NBT - “entrepreneurs feel innovation through their good internet connection”, “using the internet to promote innovation”, “using a PC on bookings”, and “a lack of technology and innovation on NBT”.

Public institutions and NGO consider most of the NBT companies unable to implement innovation - “entrepreneurs in NBT businesses are behind time regarding innovation”, “some companies incorporate what others develop”, and “if companies cannot innovate and cannot create their innovation, they cannot project themselves, and sell NBT products”, “companies do not have people with digital skills.”

Public institutions’ contributions to innovation include technological strategies - “tourism 4.0 on supporting start-ups innovation”, “Innovation Centers as the NEST”, and “the Balcão Único is an example of innovation on dematerialisation, process simplification and decarbonising”.

Technology enhances innovation - “interesting things are being done in augmented and virtual reality, where we can get the aromas and sounds of what is happening somewhere, and we are not taking advantage of that.”

Long-term business/Resilience

Public institutions and NGO focus on services that support a steady flow of tourists and generate consistent revenue over time. They consider predicting investments in marketing and promotion, developing new attractions or activities, and improving existing facilities. Public institutions and NGO also mentioned that NBT entrepreneurs should have better tourism training and management skills to improve long-term and resilient NBT businesses.

Concerning NBT business, long-term business/resilience perspective is frequently non-existent - “a small fraction that makes this (NBT) a minimally consistent business”, “NBT complementary to another activity”, “the majority are bad businessmen”, “some entrepreneurs get into this business because they see no alternative”, “we must have entrepreneurs who know and have the direction of their business plan”, “we live too much on the fleeting, too much on the short term”, “we have many investments made in tourism by people without a tourism background”, and I think this may bring us some unpleasantness in the future”, “we have several opportunistic entrepreneurs following the trend”, “I would like entrepreneurs committed with this long-term vision. Still, in a tourism economy where statistically 98% are micro companies, I have difficulty giving you a positive answer to that question”.

Public institutions and NGO advocate entrepreneurs’ qualifications for long-term business and resilience - “a company that does not have people prepared to develop the adopted business model will always have many difficulties”, and “We have made an effort in all aspects of capacity building and training for actives”, “helping them to acquire knowledge”, “entrepreneurs from sports activities who lack this management, business and tourism dimension”, “tourism entrepreneurs without NBT skills”.

NBT is an attractive business but - “one of the areas with a very high failure rate”. Understanding the market is a determinant for NBT’s long-term business and resilience - “the knowledge of market niches”, “we know our consumer poorly”, and “we are not able to offer a product that meets consumers’ needs”.

Competitive advantage

Public institutions and the NGO evidenced opposite opinions on Portugal’s competitiveness. They focused on developing a competitive advantage in nature-based tourism to attract visitors and generate revenue. They mention training, education, and the country’s dimension, which

are relevant for enhancing competitiveness. Public institutions stated that their regulatory role benefits NBT businesses, enhances the visitor experience, and makes their destinations more attractive to tourists.

The NGO interviewed does not consider Portugal a competitive NBT destination - “If you ask me, is it a great destination for NBT? No”. Moreover, the NGO states, “Portugal has several other tourist attractions that motivate reasonable tourism, as the friendliness of the people, the beaches, the climate and the country size”.

Nevertheless, public institutions stated that Portugal could improve its competitiveness by exploring different tourism segments, such as “mountain climbing, bird watching and equestrian tourism,” “bird watching has international recognition,” and “we are competitive and an exciting country.”

NBT company dimensions limit competitive advantage and organisational structure - “Almost 99% of our tourism companies are micro and small businesses and are managed by family members and youngers,” “They do not have a professional structure, nor can they because they are micro and do not have a structure to support them”.

Entrepreneurs’ qualifications limit the competitive advantage of NBT - “lack of entrepreneurs’ training, reflected in how they deal with employees, with salaries, with management, in the way they incorporate technology and innovation”.

The respondents also stated a lack of networking between NBT companies - “they are more interested in thinking that their business does not exist anywhere else”, “they are the only ones”, and “they are the best, and they do not like to share experiences”.

Public institutions and the NGO consider the competitive advantage boosted by NBT on Protected Areas - “they recognise that they are privileged to work within a Protected Area” and “an area may be wonderful, but Natural Parks or Protected Areas are worth more”.

Public institutions and the NGO value their role in helping NBT competitiveness - “what is our role? We help companies and municipalities”.

5. Discussion and Conclusions

This study was supported by relevant literature and the results of the semi-structured interviews with the managers of several NBT companies, public institutions, and one NGO to understand their perceptions on sustainability, innovation, competitive advantage, long-term business/resilience in nature-based tourism business models. Moreover, in this study, we typified nature-

based tourism companies, and we analysed how far current nature-based tourism business models embed sustainable management initiatives and innovation. The research allowed to understand how their business models align with sustainable development and with an ideal innovative sustainable business model.

Table 3 summaries the perceptions of NBT entrepreneurs, NGO, and Public Institutions on four drivers: sustainability, innovation, competitive advantage, and long-term business/resilience in NBT.

The first driver, sustainability in NBT companies, is perceived differently by NBT entrepreneurs, NGO, and public institutions. NBT companies understand sustainability from an environmental viewpoint, stating that NBT is relevant to nature conservation. Furthermore, entrepreneurs considered NBT companies relevant to culture conservation, social enhancement, and local economy promotion. On the other hand, public institutions and the NGO consider that NBT entrepreneurs do not assume their impacts on nature. Moreover, public institutions and NGO consider that NBT companies should introduce economic, environmental, and social initiatives in their businesses and that NBT companies reveal a lack of strategy. Public institutions and NGO argued that limited entrepreneurs' qualifications negatively impact NBT sustainability.

The second driver is innovation; entrepreneurs consider it a relevant asset in NBT performance. They reported that they provide innovative and personalised services, introduce creative solutions, and adopt the best practices abroad, using mobile APPs, IT and internet tools. Public institutions and NGO have an opposite perspective on innovation in NBT companies, stating that entrepreneurs link innovation to technology and confuse innovation with owning a computer and an internet connection. Public institutions and NGO also reported that NBT entrepreneurs lack digital skills and have severe difficulties adopting digital technologies in their businesses. Public institutions and NGO deliver digitalisation training and assume NBT companies are behind time on innovation, introducing innovative solutions developed by others. The third driver, long-term business/resilience, entrepreneurs expressed their willingness to maintain a resilient and long-term business, offering high-quality services and benefiting from the exceptional country's characteristics. On the other hand, public institutions and the NGO consider NBT an alternative and inconsistent business with a high mortality rate. These identities also reported that NBT businesses are not prepared to develop a BM and that NBT entrepreneurs are opportunistic, leaving mostly on the fleeting and following the trend.

The last driver is a competitive advantage; NBT entrepreneurs consider NBT a competitive tourism sector embedded in authentic experiences and high-quality services, such as NBT in Protected Areas. Additionally, NBT entrepreneurs stated the country's size as a competitive advantage, enabling exclusive short-distance experiences. Public institutions and the NGO identified competitive advantage as a relevant driver for NBT, exemplifying the country's climate, desert beaches, people's friendliness, gastronomy, country size, equestrian tourism, and bird watching as competitive assets. Notwithstanding, entities stated that Portugal is not an NBT competitive destination, as NBT companies are small, family-owned, and managed by entrepreneurs with feeble qualifications.

Table 3.3. Perceptions of Entrepreneurs, NGO, and Public Institutions (Author's elaboration)

Perceptions of Entrepreneurs, NGO, and Public Institutions		
	Entrepreneurs	NGO and Public Institutions
Sustainability	•Particularly focused on the environmental dimension •Taking care of nature •NBT as a nature sponsor/ carer •Preserving natural resources •NBT to promote local products •NBT preserving local culture •NBT enhancing local economy and regional development	•NBT companies should introduce economic, environmental, and social measures •Entrepreneurs do not realise about their impacts in nature •NBT provides higher salaries •Limited entrepreneurs qualifications impacting sustainability of NTB business •Lack of strategy
Innovation	•Providing distinct services •Customised approach •Using APP in NBT experiences (using existent APP) •Finding creative solutions •Adopting the best practices used abroad	•Entrepreneurs use PC and internet connection (technology) •Companies unable to implement innovation •Entrepreneurs behind time in terms of innovation •Companies incorporate what others develop •Entrepreneurs do not have digital skills •Public institutions helping tourism companies on digitalisation
Long-term Business/ Resilience	•Offering quality and exceptional products •Profiting from the exceptional characteristics of our country •Long-term decisions •Being resilient •Committed with a business for life	• Inconsistent business •NBT an alternative business •Entrepreneurs living on the fleeting •Opportunistic entrepreneurs following the trend •Companies not prepared to develop/adopt a BM •NBT companies with high mortality rate
Competitive advantage	•Providing highly differentiated products •Making things simple •Increasing tourist's experience •Short-distance interesting places •Quality of the services •NBT in Protected Areas •Keeping Portuguese authenticity	•Portugal is not a competitive NBT destination •Friendly people, beaches, climate and country size •Portugal is competitive in equestrian tourism, and bird watching •Limitations due to companies' dimension and structure •Limitations due to lack of entrepreneur's qualifications

The analysis clearly shows different perspectives between the NBT entrepreneurs, public institutions, and the NGO. The information gathered through public institutions consultation and the NGO aligns with the perspectives in the literature consulted.

NBT companies included in this study are small and family-run businesses, some lacking appropriate training in tourism and innovation and having difficulty incorporating sustainability (Moscardo, 2008; Rønningen, 2010; Biloslavo et al., 2018).

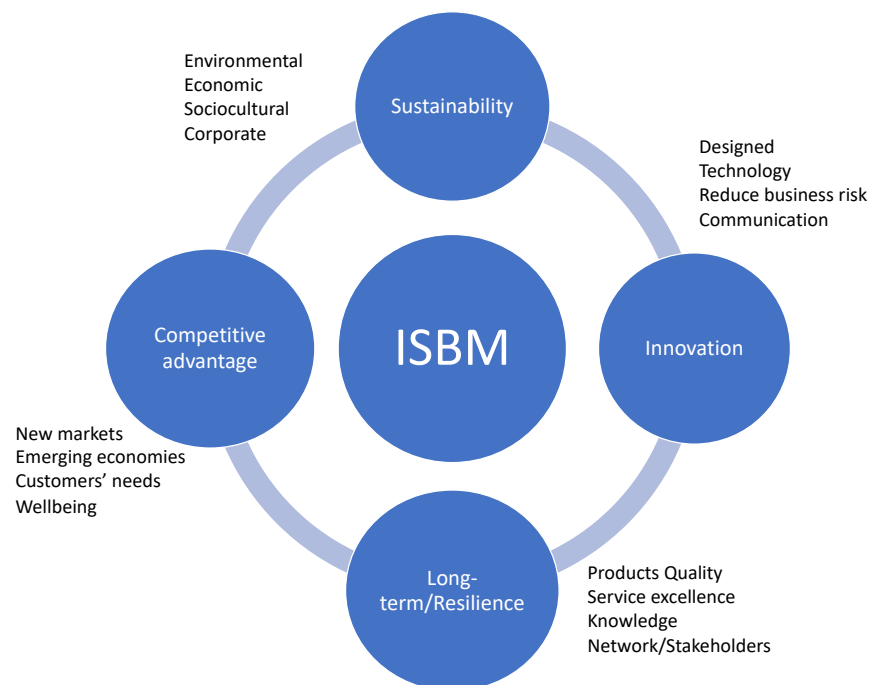
The introduction of innovation in BMs directly correlates with the sustainability dimensions (Schaltegger et al., 2012; França et al., 2017) and with new value creation and value delivery procedures (Yang et al., 2017). The previous literature reveals a shortfall in innovation. Considering the introduction of innovation in NBT BMs, we identified companies with small teams, family-owned, and the majority with no appropriate knowledge and skills to adopt innovative proposals (Omerzel, 2016). Innovation and entrepreneurship in NBT are relevant drivers enhancing competitive advantage (Nybakk & Hansen, 2008; Rodríguez et al., 2014). The interviewed companies were revealed to be weakly innovative. Therefore, we assume that the competitive advantage of NBT companies may be compromised. This assumption corroborates the public institutions and the NGO vision that “NBT entrepreneurs are opportunistic, leaving mostly on the fleeting and following the trend”. Innovation and competitive advantage go hand in hand (Jensen & Prebensen, 2015; Prange & Schlegelmilch, 2016). Therefore, less innovative companies will be less competitive, which public institutions and the NGO acknowledged, stating “NBT companies, as an alternative and inconsistent businesses with a high mortality rate”.

Regarding sustainability, environmental regulations force NBT companies to commit to environmental sustainability. Our results prove that NBT entrepreneurs are oriented toward ecological sustainability, with apparent gaps in sustainability’s socio-cultural and economic dimensions. Sustainability and resilience in NBT BMs contribute to improved business performance (Teece, 2010; Boons & Lüdeke-Freund, 2013; Espiner et al., 2017; Sahebalzamani & Bertella, 2018) and long term-business (Ortiz-villajos & Sotoca, 2018; Divisekera & Nguyen, 2018). The NBT entrepreneurs interviewed showed an impaired vision of the sustainability concept. The economic dimension of sustainability is understood through a limited perspective, where NBT companies pay salaries, taxes, and rents. The introduction of sustainability in NBT companies is flawed, compromising long-term and resilient businesses, which the public institutions and the NGO confirmed.

In summary, NBT companies’ BMs do not accomplish the basic requirements of ISBMs (Chesbrough, 2010; Boons & Lüdeke-Freund, 2013; Breuer et al., 2018; Bocken et al., 2018; Pieroni et al., 2019).

The analysis, interpretations of this data, and the fundamental underlying concept of ISBM available in the literature allowed us to consolidate four key drivers of an ISBM: sustainability, innovation, competitive advantage, and Long-term/resilience (Figure 5).

Figure 3.5. Drivers of an ISBM (Author's elaboration)



Innovative solutions are linked to solving consumer needs and customer problems (Bekhradi & Yannou, 2016). Companies must identify the problem they want to solve, how they will do it and to whom their product will be directed when innovating (Bekhradi & Yannou, 2016). The research showed that the entrepreneurs were particularly interested in their business area. The NBT entrepreneurs interviewed were not trying to respond to a market need but have invested in a business in which they have a personal interest. This situation can be related to either inherited family property, and they decided to make it profitable, or their passion for nature and biodiversity, such as bird watching, dolphin and whale watching, or geology. In summary, the

entrepreneurs found NBT to be a source of income and an opportunity to invest outside urban centers. However, successful innovative solutions are not primarily aimed at solving a consumer problem or need and benefit from significant R&D investment, helping companies improve their performance (Jaruzelski et al., 2014).

As a result of our research, NBT companies lack the initiative of innovation and sustainability in their BMs. The results show that NBT companies focus on economic sustainability and are concerned with conveying an ecological commitment, fulfilling the legal requirements. It requires NBT companies to expand to social sustainability and improve environmentally and economically. The development of ISBM for NBT companies requires adapting and modifying the existing BM (Schaltegger et al., 2012). Such change in NBT BMs increases complexity, promotes the development of new BMs that introduce innovation and sustainability, recognises the importance of all stakeholders, and considers customers in all stages (Reinhold et al., 2017). Filling the gap in tourism publications on business sustainability and BM (Reinhold et al., 2017), we propose an ISBM framework for NBT companies, an emergent field of research (Geissdoerfer et al., 2018). In this research, we considered the models proposed by Osterwalder and Pigneur (2010) and by Bocken et al. (2018) based on Osterwalder and Pigneur (2010). Based on the BM Canvas by Osterwalder and Pigneur, (2010), and the value mapping tool for SBM by Bocken et al. (2018), we propose an ISBM framework to enable NBT companies to offer, capture, create, and deliver value in line with the five principles of the UN SDGs, the 5Ps - People, Planet, Prosperity, Partnership, and Peace, aligned with consumers' requirements.

Figure 3.6. Proposed ISBM framework (Author's elaboration)

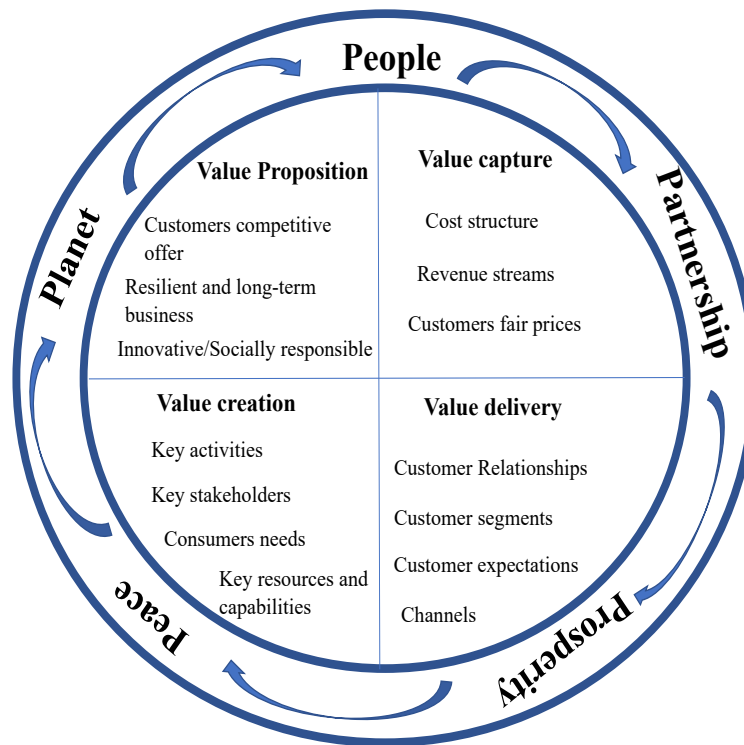


Figure 6 adopts a circular shape, introducing a circularity perspective in the NBT business. The ‘circular economy’ paradigm, focused on closing, slowing, and narrowing resource loops, has roots in the 1960s but was recently picked up by policy and business (Blomsma & Brennan, 2017; Bocken et al., 2016; Schmidt-Bleek, 1998; Stahel & Reday-Mulvey, 1981). It includes several examples from Industrial Symbiosis up until slowing consumption through the role of business. Both paradigms challenge economic, social, and environmental paradigms and may drive mindset changes by providing a novel perspective.

Our framework provides a new perspective on ISBM, where the 5Ps of the UN SDGs support value proposition, capture, creation, and delivery. Additionally, customers’ competitive offers, fair prices, needs, and expectations are also considered and supported by the UN SDG 5Ps. This framework aims to drive NBT managers through their BM innovation by providing innovation

and sustainability, fundamental assets to improve competitiveness and long-term/resilient NBT business.

The importance of this research is related to the proposal of a theoretical framework and is based on research work in NBT companies. These. The theoretical contributions of this study can be considered at three levels. First, this study's theoretical contributions are directly related to identifying NBT managers, public institutions, and the NGO perceptions of sustainability and innovation, long-term business, resilience, and competitive advantage in NBT companies. Secondly, our study contributes to the literature by characterising Portuguese NBT companies on how NBT companies' BMs are committed to a sustainable development model and understanding how NBT companies are aligned with an ISBM. Finally, the results provided clues to propose an ISBM framework for NBT companies, supported by the consulted BMs literature.

Future research may include ISBM framework testing and ISBM framework assessment in achieving the UN SDGs. Additionally, it lacks a deeper understanding of the use of natural resources in NBT, the social impacts of NBT, and the economic dimension of NBT for communities and countries. Another critical area of research is understanding the basic requirements for modelling sustainability-oriented business (Breuer et al., 2018). The present research focused on a specific country. Future research on other countries and continents may be a relevant strategy to understand whether NBT BMs' weaknesses are geographically restricted.

Understanding companies' BM allows for comparing different BMs, assessing their sustainability potential, and consolidating knowledge on SBM patterns to develop an overarching SMB structure (Ludeke-Freund et al., 2019). Unfortunately, it was difficult to find available NBT managers to participate in this study, which may explain fragmented knowledge about NBT, particularly concerning innovation, business constraints, and economic impacts (Fredman & Tyrväinen, 2010). This limitation highlights research difficulties, leading to the absence of an adequate SBM design addressing all dimensions of sustainability (Fredman & Tyrväinen, 2010; Fredman et al., 2012) and the access to primary data on BM for NBT (Reinhold et al., 2018).

6. References

- Abreu, C., Tardieu, F., & Abreu, A. D. (2022). 4 . Conservation tourism in Pangatalan island , Palawan UNESCO Biosphere Reserve, 38–48.
<https://doi.org/http://dx.doi.org/10.4337/9781839100185>
- Andreassen, T. W., Lervik-Olsen, L., Snyder, H., Van Riel, A. C. R., Sweeney, J. C., & Van Vaerenbergh, Y. (2018). Business model innovation and value-creation: the triadic way. *Journal of Service Management*, 29(5), 883–906. <https://doi.org/10.1108/JOSM-05-2018-0125>
- Biloslavo, R., Bagnoli, C., & Edgar, D. (2018). An eco-critical perspective on business models: The value triangle as an approach to closing the sustainability gap. *Journal of Cleaner Production*, 174, 746–762. <https://doi.org/10.1016/j.jclepro.2017.10.281>
- Bocken, N. M.P., Schuit, C. S. C., & Kraaijenhagen, C. (2018). Experimenting with a circular business model: Lessons from eight cases. *Environmental Innovation and Societal Transitions*, 28(July 2017), 79–95. <https://doi.org/10.1016/j.eist.2018.02.001>
- Bocken, Nancy M P, Pauw, I. De, Bakker, C., Grinten, B. Van Der, Bocken, N. M. P., Pauw, I. De, ... Grinten, B. Van Der. (2016). Product design and business model strategies for a circular economy. *Journal of Industrial and Production Engineering*, 1015, 1–12.
<https://doi.org/10.1080/21681015.2016.1172124>
- Boons, F., & Lüdeke-Freund, F. (2013). Business models for sustainable innovation: State-of-the-art and steps towards a research agenda. *Journal of Cleaner Production*, 45, 9–19.
<https://doi.org/10.1016/j.jclepro.2012.07.007>
- Breuer, H., Fitcher, K., Tiemann, I. (2018). Sustainability-oriented business model development : principles , criteria and tools. *Int. J. Entrepreneurial Venturing*, 10(2), 256–286. <https://doi.org/10.1504/ijev.2018.10013801>
- Camisón, C., & Monfort-Mir, V. M. (2012). Measuring innovation in tourism from the Schumpeterian and the dynamic-capabilities perspectives. *Tourism Management*, 33(4), 776–789. <https://doi.org/10.1016/j.tourman.2011.08.012>
- Cosenz, F., & Noto, G. (2018). A dynamic business modelling approach to design and experiment new business venture strategies. *Long Range Planning*, 51(1), 127–140.
<https://doi.org/10.1016/j.lrp.2017.07.001>
- Dentchev, N., Rauter, R., Jóhannsdóttir, L., Snihur, Y., Rosano, M., Baumgartner, R., ... Jonker, J. (2018). Embracing the variety of sustainable business models: A prolific field of research and a future research agenda. *Journal of Cleaner Production*, 194, 695–703.
<https://doi.org/10.1016/j.jclepro.2018.05.156>
- Foss, N. J., & Saebi, T. (2018). Business models and business model innovation: Between wicked and paradigmatic problems. *Long Range Planning*, 51(1), 9–21.
<https://doi.org/10.1016/j.lrp.2017.07.006>

- Fredman, P., & Tyrväinen, L. (2010a). Frontiers in Nature-Based Tourism. *Scandinavian Journal of Hospitality & Tourism*, 10(3), 177–189.
<https://doi.org/10.1080/15022250.2010.502365>
- Fredman, P., & Tyrväinen, L. (2010b). Frontiers in Nature-Based Tourism. *Scandinavian Journal of Hospitality and Tourism*. <https://doi.org/10.1080/15022250.2010.502365>
- Fredman, P., Wall-Reinius, S., & Grundén, A. (2012). The Nature of Nature in Nature-based Tourism. *Scandinavian Journal of Hospitality and Tourism*, 12(4), 289–309.
<https://doi.org/10.1080/15022250.2012.752893>
- Geissdoerfer, M., Morioka, S. N., de Carvalho, M. M., & Evans, S. (2018). Business models and supply chains for the circular economy. *Journal of Cleaner Production*, 190, 712–721. <https://doi.org/10.1016/j.jclepro.2018.04.159>
- Geissdoerfer, M., Pelzeter, C., & Santa-maria, T. (2023). Drivers and barriers for circular business model innovation, (November 2022), 1–19. <https://doi.org/10.1002/bse.3339>
- Geissdoerfer, M., Savaget, P., & Evans, S. (2017). The Cambridge Business Model Innovation Process. *Procedia Manufacturing*, 8(October 2016), 262–269.
<https://doi.org/10.1016/j.promfg.2017.02.033>
- Geissdoerfer, M., Vladimirova, D., & Evans, S. (2018). Sustainable business model innovation: A review. *Journal of Cleaner Production*, 198, 401–416.
<https://doi.org/10.1016/j.jclepro.2018.06.240>
- Geissdoerfer, M., Vladimirova, D., Fossen, K. Van, & Evans, S. (2018). Product, service, and business model innovation: A discussion. *Procedia Manufacturing*, 21, 165–172.
Retrieved from <https://doi.org/10.1016/j.promfg.2018.02.107>
- He, J., & Ortiz, J. (2021). Sustainable business modelling: The need for innovative design thinking. *Journal of Cleaner Production*, 298, 126751.
<https://doi.org/10.1016/j.jclepro.2021.126751>
- Hjalager, A. M. (2010). A review of innovation research in tourism. *Tourism Management*, 31(1), 1–12. <https://doi.org/10.1016/j.tourman.2009.08.012>
- Jensen, Ø., & Prebensen, N. (2015). Innovation and Value Creation in Experience-based Tourism. *Scandinavian Journal of Hospitality and Tourism*, 15, 1–8.
<https://doi.org/10.1080/15022250.2015.1066093>
- Kahn, K. B. (2018). Understanding innovation. *Business Horizons*, 61(3), 453–460.
<https://doi.org/10.1016/j.bushor.2018.01.011>
- Kristjánsdóttir, K. R., Ólafsdóttir, R., & Ragnarsdóttir, K. V. (2017). Reviewing integrated sustainability indicators for tourism. *Journal of Sustainable Tourism*, 26(4), 583–599.
<https://doi.org/10.1080/09669582.2017.1364741>

- Ludeke-Freund, F; Gold, S; Bocken, N. M. P. (2019). A Review and Typology of Circular Economy Business Model Patterns. *Journal of Industrial Ecology*, 23(1), 36–61. <https://doi.org/10.1111/jiec.12763>
- Lüdeke-Freund, F., & Dembek, K. (2017). Sustainable business model research and practice: Emerging field or passing fancy? *Journal of Cleaner Production*, 168, 1668–1678. <https://doi.org/10.1016/j.jclepro.2017.08.093>
- Magretta, J. (2002). Why business models matter. *Harvard Business Review*, 3–8.
- Margaryan, L. (2016). Nature as a commercial setting: the case of nature-based tourism providers in Sweden. *Current Issues in Tourism*, 21(16), 1893–1911. <https://doi.org/10.1080/13683500.2016.1232378>
- Margaryan, L., & Fredman, P. (2017). Natural amenities and the regional distribution of nature-based tourism supply in Sweden. *Scandinavian Journal of Hospitality and Tourism*, 17(2), 145–159. <https://doi.org/10.1080/15022250.2016.1153430>
- Martins, L. L., Rindova, V. P., & Greenbaum, B. E. (2015). Unlocking the hidden value of concepts: A cognitive approach to business model innovation. *Strategic Entrepreneurship Journal*. <https://doi.org/10.1002/sej.1191>
- Maxim, C., Morrison, A. M., & Maxim, C. (2022). Crisis in the city ? A systematic literature review of crises and tourism cities Crisis in the city ? A systematic literature review of crises and tourism cities. *Tourism Recreation Research*, 47, 1–13. <https://doi.org/10.1080/02508281.2022.2078063>
- Moscardo, G. (2008). Sustainable Tourism Innovation: Challenging Basic Assumptions. *Tourism and Hospitality Research*, 8(1), 4–13. <https://doi.org/10.1057/thr.2008.7>
- Nasiri, M., Rantala, T., Saunila, M., Ukko, J., & Rantanen, H. (2018). Transition towards sustainable solutions: Product, service, technology, and business model. *Sustainability (Switzerland)*, 10(2). <https://doi.org/10.3390/su10020358>
- Omerzel, D. G. (2016). A systematic review of research on innovation in hospitality and tourism. *International Journal of Contemporary Hospitality Management*, 28(3), 516–558. <https://doi.org/10.1108/IJCHM-10-2014-0510>
- Osterwalder, A., Pigneur, Y., & Clark, T. (2010). *Business model generation: A handbook for visionaries, game changers, and challengers*. Wiley.
- Rantala, T., Ukko, J., Saunila, M., & Havukainen, J. (2018). The effect of sustainability in the adoption of technological, service, and business model innovations. *Journal of Cleaner Production*, 172, 46–55. <https://doi.org/10.1016/j.jclepro.2017.10.009>
- Reinhold, S., Zach, F. J., & Krizaj, D. (2017a). Business models in tourism: a review and research agenda. *Tourism Review*, 72(4), 462–482. [118](https://doi.org/10.1108/TR-05-2017-</p>
</div>
<div data-bbox=)

- Reinhold, S., Zach, F. J., & Krizaj, D. (2017b). Business models in tourism: a review and research agenda. *Tourism Review*, 72(4), 462–482. <https://doi.org/10.1108/TR-05-2017-0094>
- Reinhold, S., Zach, F. J., & Krizaj, D. (2017c). Business models in tourism: a review and research agenda. *Tourism Review*, 72(4), 462–482. <https://doi.org/10.1108/TR-05-2017-0094>
- Richardson, J. E. (2005). The Business Model: An Integrative Framework for Strategy Execution. *Strategic Change*, 17(5). <https://doi.org/10.2139/ssrn.932998>
- Ritter, T., & Lettl, C. (2018). The wider implications of business-model research. *Long Range Planning*, 51(1), 1–8. <https://doi.org/10.1016/j.lrp.2017.07.005>
- Rønningen, M. (2010). Innovative processes in a nature-based tourism case: The role of a tour-operator as the driver of innovation. *Scandinavian Journal of Hospitality and Tourism*, 10(3), 190–206. <https://doi.org/10.1080/15022250.2010.491255>
- Sahebalzamani, S., & Bertella, G. (2018a). Business models and sustainability in nature tourism: A systematic review of the literature. *Sustainability (Switzerland)*, 10(9), 1–15. <https://doi.org/10.3390/su10093226>
- Sahebalzamani, S., & Bertella, G. (2018b). Business models and sustainability in nature tourism: A systematic review of the literature. *Sustainability (Switzerland)*, 10(9). <https://doi.org/10.3390/su10093226>
- Schaltegger, S., Hansen, E. G., & Lüdeke-Freund, F. (2016). Business Models for Sustainability: Origins, Present Research, and Future Avenues. *Organization and Environment*, 29(1), 3–10. <https://doi.org/10.1177/1086026615599806>
- Schaltegger, S., Lüdeke-Freund, F., & Hansen, E. G. (2012). Business cases for sustainability: The role of business model innovation for corporate sustainability. *International Journal of Innovation and Sustainable Development*, 6(2), 95–119. <https://doi.org/10.1504/IJISD.2012.046944>
- Schneider & Clauss. (2019). Business Models for Sustainability : Choices and Consequences. *Organization & Environment*, (May). <https://doi.org/10.1177/1086026619854217>
- Siddaway, A., Wood, A., & Hedges, L. (2019). How to Do a Systematic Review: A Best Practice Guide for Conducting and Reporting Narrative Reviews, Meta-Analyses, and Meta-Syntheses. *Annual Review of Psychology*, 70. <https://doi.org/10.1146/annurev-psych-010418-102803>
- Täuscher, K., & Abdelkafi, N. (2018). Scalability and robustness of business models for sustainability: A simulation experiment. *Journal of Cleaner Production*, 170, 654–664. <https://doi.org/10.1016/j.jclepro.2017.09.023>

- Williams, A. M., & Shaw, G. (2011). Internationalization and innovation in tourism. *Annals of Tourism Research*, 38(1), 27–51. <https://doi.org/10.1016/j.annals.2010.09.006>
- Wirtz, B. W., Pistoia, A., Ullrich, S., & Göttel, V. (2016). Business Models: Origin, Development and Future Research Perspectives. *Long Range Planning*, 49(1), 36–54. <https://doi.org/10.1016/j.lrp.2015.04.001>
- Zott, C., & Amit, R. (2010). Business model design: An activity system perspective. *Long Range Planning*, 43(2–3), 216–226. <https://doi.org/10.1016/j.lrp.2009.07.004>

Annex B

(Author's elaboration)

Themes	Interview Questions	Keywords
Introduction	Introduction of the research. Information on ethics, confidentiality and informed consent. •What is your company's primary area(s) of expertise? •Which NBT activities does your company carry out? •Which of these activities are directly linked to nature? •If you provide other than NBT activities, what % of the turnover does NBT business represent? •Do you carry out NBT activities all year round (if not, at what times of the year)? •What was the primary motivation for launching a "nature tourism" business? •How many employees does your company have? •What specific training do you (or your employees) have for your nature business? •How relevant is the hiring of qualified employees? •Do the activities/services you develop and consider as "of nature" sufficiently remunerate the company? And if not, what role do they play in the company's offer portfolio (assuming the whole value proposition of the company)? Which are the leading infrastructures/equipment used in your business?	Informed consent; Voice recorder; General profile; Types of offer; Companies size, history, location
Sustainability	•How do you understand sustainability in NBT companies? •How is your company sustainably committed? •Do you think sustainability is an asset in NBT? •Which are the primary natural resources available in NBT? •How is the state of the art of nature-based tourism (NBT) in Portugal? •How are NBT companies committed to natural resource conservation? •How do NBT companies adopt sustainability principles? •How do you organise/structure your activities/services in nature? •What is nature for you? •What about wildlife? Does this concept make sense in Portugal (for you and your clients)? •What kind of scenery/nature is involved in your offer? •How can your activity affect natural resources?	Sustainability concept; Environment sustainability; Sustainable Tourism; Natural resources impact; Nature experiences; Circular economy

	•Do you have evidence that a company's circular economy minimises resource use, enhances competitive advantage and long-term business, and improves resilience? •How do you consider sustainability in your business model?	
Innovation	•How do NBT companies adopt innovation? •How relevant are creativity, a new way of thinking and strategic innovation in your company? •From a technological point of view, which are the leading technologies used in your business? •How do you understand innovation in NBT companies' business model? •To what extent does your offer provide high-quality and innovative experiences? •What kind of business opportunities can you identify in nature tourism? (Creativity)	Innovation in NBT; Creativity; Technology and Innovation;
Long-term Business/Resilience	•How relevant is the state of conservation of natural resources for your activity and business performance? •Which are the main driving forces for your company's decision-making? •To what extent is your company's business model dynamically committed to maintaining a long-term business? •What are the implications of nature conservation and biodiversity policies (national and international) in your business? •Do you feel that cooperation can be an asset in long-term business?	Long-term NBT business; Nature conservation and NBT long-term business/Resilience; Cooperation and long-term business/Resilience
Competitive advantage	•Which nature attractions do you consider critical to developing your business? •What are the determining factors to improve competitive advantage in your business? •What is your business value proposition? •What value proposition do you think you provide for your customers? •How does the existence of national parks impact your business? Negatively or positively? •Do you feel that cooperation can be an asset in competitive advantage? •How do you consider competitive advantage in your business model?	Nature assets; Driving factors; Value proposition; Cooperation
Market and client profiles	•What are the main markets you work with? •Which client profile do you have for the different services? •What do these clients expect from the services/activities you develop in nature?	Market; Client profile; Client expectations

Conclusion

- Would you like to talk about any other aspect not mentioned?
 - To what extent is nature tourism research important for you (your business)?
 - Would you be interested in receiving the final document?
-

Chapter 4

Study III

Business models for Nature-based Tourism companies: The Adoption of sustainable requirements

Abstract

Developing innovative sustainable business models for nature-based tourism companies introduces a new perspective on achieving sustainability. The study discloses the relevance of innovative sustainable business models in nature-based tourism companies, using an exploratory qualitative research design through an inductive approach. Thirteen interviews were delivered to Portuguese nature-based tourism entrepreneurs. In this study, we discuss how the interviewed NBT entrepreneurs adopt the four guiding principles of an innovative business model for sustainability proposed by Breuer et al. (2018). We identify the foremost entrepreneurs' limitations in innovating their business models; we analyse how entrepreneurs integrate sustainability principles (such as environmental, social and economic) into companies' activities and its relationship with extending value creation, implementing business innovation through a system thinking and integrate stakeholders to support their sustainability orientation. This study analyses the results obtained in Study I and Study II, in which we highlight the mediating role of the principles proposed by Breuer et al. (2018) for the development of innovative and sustainable business models and the interconnection between Breuer's principles and the four drivers identified in Study II, sustainability, innovation, competitive advantage, and long-term/resilience.

Keywords: Sustainability, business model, business model innovation, value creation, stakeholders

1. Introduction

The tourism sector faces several challenges and is forced to adopt strategies capable of responding to market demands and positioning itself as a competitive activity. Natural resources underpin different approaches to tourism, such as nature-based tourism (NBT), often associated with small and family businesses (Omerzel, 2016). Accordingly, managers create offerings supported by the most relevant natural assets, where the business management is supported by one or two persons (Omerzel, 2016).

The adoption of a business model in NBT companies is not always evident. NBT's business model can exist informally, especially in small and family companies (Biloslavo, Bagnoli, & Edgar, 2018). Introducing the business model concept in tourism companies is scarce and little researched in the tourism context (Reinhold et al., 2017a). Reinhold et al. (2017) propose a conceptual basis and relevant knowledge for studying business models in tourism research, moving from existing configurations of business models to new and emerging business model configurations in tourism. Boons and Lüdeke-Freund (2013) defended that companies' business models can be assumed as a mediator for innovation, linking production, consumption, and stakeholders' expectations and embedding the principles for sustainable business models. The development of innovative sustainable business models in NBT companies can be a challenge but simultaneously an opportunity to reduce obsolete practices (Breuer et al., 2018; Biloslavo et al., 2018; Täuscher & Abdelkafi, 2018), to increase NBT companies' performance (Teece, 2010; Boons & Lüdeke-Freund, 2013; Sahebalzamani & Bertella, 2018a), competitive advantage (Souto, 2015) and long-term businesses (Tidd & Bessant, 2018). Additionally, "Business model innovation for sustainability improves a company's ability to create, maintain, or regenerate natural, social and economic capital beyond its organisational boundaries by changing the value proposition for its customers and all other stakeholders and how value is created, delivered and captured." (Ludeke-Freund et al., 2019, p. 21). Innovation enables companies to "alter their ability to act, and hence their ability to integrate ecological and social concerns into their business activities" (Lüdeke-Freund & Schaltegger, 2023, p.405).

Nevertheless, it is not possible to predict how the business model will look, meaning that the planned business model will differ from the realised business model (Lüdeke-Freund & Schaltegger, 2023). However, Research gaps in Innovative Sustainable Business Models (ISBMs) for NBT companies (Geissdoerfer, et al., 2018), as well as on business sustainability and BMs in tourism publications (Biloslavo et al., 2018; Reinhold et al., 2017), persist. To help bridge this gap, Breuer et al. (2018) proposed four guiding principles: Sustainability orientation, Extended value creation, Systems thinking and Stakeholder integration.

The research undertaken in study II aimed to understand the perceptions of NBT entrepreneurs, public institutions, and an NGO on the importance of sustainability and innovation in the business models (BM) of NBT companies and how these assets contribute to competitiveness and long-term business resilience. The results obtained in Study II revealed different perceptions among NBT entrepreneurs, public institutions and NGO on the topics covered. In addition to an in-depth analysis of the information gathered, the second study allowed for the proposal of a framework for an innovative sustainable business model (ISBM) for NBT, in line with the UN SDGs, in which the 5Ps (Planet, People, Partnership, Prosperity, Peace) support the value proposition, value capture, value creation and value delivery.

However, companies usually have a business model, formally or informally implemented, which mostly does not explicitly reflect an approach based on the principles of sustainability. To fill this research gap, the current study aims to understand what sustainable business model requirements nature-based tourism companies adopt in their business model. Thus, to answer this question, in this study, we followed the work developed by Breuer et al. (2018), where four mediating principles are proposed as mediators for developing an innovative and sustainable business model. First, we provide the most relevant interview results, summarised according to the four principles of innovative and sustainable business models proposed by Breuer et al. (2018). Second, we outline how the Portuguese NBT companies adopt Breuer et al. (2018) guiding principles of business model innovation for sustainability. Third, we discuss the constraints NBT companies face in adopting these principles. To attain our purpose, we delivered thirteen semi-structured interviews with Portuguese NBT entrepreneurs.

2. Business models for innovation and sustainability

Developing a culture of sustainability and innovation is challenging, encompassing digitalisation, decarbonisation, and circular economy (Bocken et al. 2014), which can be achieved by adapting and modifying the existing business models (BM) (Lüdeke-Freund & Schaltegger, 2023). Baden-Fuller and Morgan (2010) considered BM “recipes for creative managers” (p.156), and as mentioned by Zott et al., (2011), the business model concept helps to communicate business ideas quickly and effectively to investors. There has been an evolution of this concept, incorporating the role of a tool for systemic analysis, planning, and communication (Doleski., 2015), on the one hand, and the other hand, having a function of a strategic asset for competitive advantage and company performance (Chesbrough, 2007; Magretta, 2002).

Innovating in the business model (IBM) involves rethinking core aspects of how an organisation creates, delivers, and captures value (Kennedy & Bocken, 2019). Incorporating sustainability into business models entails aligning economic, environmental, and social goals (Bocken et al., 2014). Business models for sustainability (SBM) unveil a recent research field (e.g., (Stubbs & Cocklin, 2008), also referred to as innovative sustainable business models (ISBM) (e.g., Bocken et al., 2013), encompassing the objective of understanding how business model innovation can fulfil a positive role in society (Snihur & Bocken, 2022). Among the various sustainable business models, the circular economy model is an example which emphasises environmental concerns such as resource efficiency, reducing waste production, material reusing and product design optimisation through a close material loop (Geissdoerfer et al., 2017). Several definitions of business models for sustainability are available in the literature. According to Stubbs and Cocklin (2008), “an organisation adopting a sustainable business model develops internal structural and cultural capabilities to achieve company-level sustainability and collaborates with key stakeholders to achieve sustainability for the system that the organisation is part of” (p. 123). Another definition considers “A business model for sustainability is the activity system of a company which allocates resources and co-ordinates activities in a value creation process which overcomes the public/private benefit discrepancy. A business model for sustainability is the structural template of a business logic which creates the business case for sustainability” (Lüdeke-Freund, 2009, p. 56). Schaltegger et al. (2012) define the business model for sustainability “...as supporting voluntary, or mainly voluntary, activities which solve or moderate social and/or environmental problems. A business model for sustainability is actively managed to create customer and social value by integrating social, environmental, and business

activities” (p. 112). A business model for sustainability is also defined “as the rationale of how an organisation creates, delivers and captures economic, environmental, and social forms of value simultaneously” (Joyce et al., 2015, p.39).

Boons and Lüdeke-Freund (2013) suggested innovative sustainable business models. The gap in understanding the basic requirements for SBMs still needs to be improved (Schaltegger et al., 2016a; Upward & Jones, 2016). Geissdoerfer et al. (2016) consider that the “sustainable business innovation process specifically aims at incorporating sustainable value and a proactive management of a broad range of stakeholders into the business model” (p.1220). Breuer et al. (2018) developed a theoretical framework to analyse different approaches to business model development, proposing minimum requirements for sustainable business modelling. Nevertheless, companies’ sustainability orientation determines sustainable business model development (Breuer et al., 2018).

If reaching the ideal business model for sustainable development is a challenge (Breuer et al., 2018; Lüdeke-Freund et al., 2019; Lüdeke-Freund & Schaltegger, 2023), innovative sustainable business models are a new area of interest (Geissdoerfer et al., 2017). Innovative sustainable business models must be ecologically robust and economically sustainable (Täuscher & Abdelkafi, 2018). Innovative sustainable business models are attractive as they incorporate all the dimensions of sustainability and introduce new ways of capturing, creating, and delivering value, enabling entrepreneurs to implement innovative and positive solutions concerning critical aspects of sustainability such as climate action, biodiversity, and poverty (Kennedy & Bocken, 2019). Innovative sustainable business models show that companies’ design and value creation increase sustainable value and reliability and provide the best solution for customers and the company (Lüdeke-Freund et al., 2018; Schneider & Clauss, 2019). However, there is no consensus on the definition of an innovative and sustainable business model, which leads us to assume the need to improve this field research. Bocken et al. (2014) define innovative sustainable business model as: “Innovations that create significant positive and/or significantly reduced negative impacts for the environment and/or society, through changes in the way the organisation and its value-network create, deliver value and capture value (i.e. create economic value) or change their value propositions” (p.44). In this study, we adopt the definition of innovative sustainable business model proposed by Lüdeke-freund et al., (2019), (p.105): “Business model innovation for sustainability improves a company’s ability to create, maintain, or regenerate natural, social and economic capital beyond its organisational boundaries by

changing the value proposition for its customers and all other stakeholders and how value is created, delivered and captured.” Innovative sustainable business models are valuable and appropriate for NBT business as they introduce a change in the understanding of a business model and design requirements (Breuer et al., 2018).

Several drivers are responsible for pushing organisations towards sustainable business model innovation (Lüdeke-Freund & Schaltegger, 2023). We can mention a regulatory perspective, where sustainable business model innovation may result from compliance with environmental regulations, reducing companies’ ecological footprint, and contributing positively to society (Bocken et al., 2016). As businesses acknowledge to minimise and mitigate waste production, enhance resource efficiency, and implement responsible use of resources, sustainable business model innovation prompts a tool for addressing resource scarcity and environmental concerns by focusing on circular economy principles (Geissdoerfer et al., 2018). Circular economy introduces a range of products and services with low environmental impact, especially for environmentally conscious consumers, promoting customer loyalty and generating profits (Bocken et al., 2016). Introducing sustainability in business models and innovation leads companies towards competitive advantage through unique, environmentally responsible, resilient products and services (Schaltegger et al., 2012; Schneider & Clauss, 2019).

Innovative Sustainable Business Models yield outcomes and benefits to the extent that they contribute to companies’ resilience, resulting from the implemented measures on environmental vulnerabilities and risks (Teece, 2010; Boons & Lüdeke-Freund, 2013; Espiner et al., 2017); Sahebalzamani & Bertella, 2018b). Moreover, Innovative Sustainable business models benefit companies’ cost savings, boosting a resource-efficient model (Jensen & Prebensen, 2015; Prange & Schlegelmilch, 2016). Moreover, Innovative Sustainable business models improve the company’s reputation, nourish clients’ and stakeholders’ trust and loyalty (Massa et al., 2017; Breuer et al., 2018) and impact long-term value creation in all sustainability dimensions (economic environment and social) (Stubbs & Cocklin, 2008). Schaltegger et al. (2012) refer to the need to understand how NBT entrepreneurs put sustainability-oriented goals at their organisation’s core.

The literature provides several clues and research gaps about developing, assessing, and monitoring innovative sustainable business models. Schaltegger and Wagner (2011) mention that integrating sustainability principles is complex and conditioned by uncertainty in market trends and other external factors. Jensen and Prebensen (2015) note cultural and institutional

inertia as the main culprits behind the resistance to adapting the existing business models. Improving indicators and metrics to assess sustainable business models' environmental, social, and economic consequences was underlined (Boons & Lüdeke-Freund, 2013). Nevertheless, Geissdoerfer et al. (2018) highlight the lack of standardised frameworks for innovative sustainable business models, compromising the possibility to perform comparisons and benchmarking between economic sectors. Few studies related to NBT addressed sustainability (Reinhold et al., 2017). In addition, there is non appropriate design for an SBM (Täuscher & Abdelkafi, 2018) integrating all sustainability dimensions (Biloslavo et al., 2018). Moreover, the lack of research using primary data on BMs for NBT (Reinhold et al., 2018) also fostered our research.

To achieve this purpose, in this study, we follow (Breuer et al., 2018) guiding principles for developing innovative sustainable business models. The four guiding principles of business model innovation for sustainability, Breuer et al. (2018), are Sustainability orientation, Extended value creation, System thinking and Stakeholder integration, which should be used to frame an innovative sustainable business model, integrating all stakeholders (Lüdeke-Freund & Schaltegger, 2023). According to Lüdeke-Freund and Schaltegger (2023), the four guiding principles do not guarantee the sustainability of the business but guide the existing business models towards a sustainable model. Considering the four guiding principles of a business model for sustainable innovation prompts the introduction of a set of actions that help prevent the gap between the idealised model and the developed business model (Lüdeke-Freund & Schaltegger, 2023). The first guiding principle, Sustainable orientation, considers an integrated vision of all sustainability dimensions such as environment, social, economic and the company. The second principle, Extended value creation, proposes expanding the ecological, social, and economic value creation to all companies' stakeholders. The third guiding principle, System thinking, provides for establishing the most diverse interactions between the company and all sustainability dimensions to innovate their business models. The fourth guiding principle, Stakeholder integration, emphasises the importance of including a vast network of stakeholders capable of supporting the other three guiding principles (Breuer et al., 2018).

The four guiding principles orient companies towards sustainability and perspective an extended value creation for the company and all stakeholders, introduce a system thinking in the organisations through establishing diverse relationships between the company and all the dimensions of sustainability (environment, social and economic), and integrating stakeholders

(Breuer et al., 2018). Adopting the four guiding principles in innovative sustainable business models helps companies to commit to sustainable value creation (Lüdeke-Freund & Schaltegger, 2023) towards a more strategic and comprehensive view of business models (e.g., Baden-Fuller & Morgan, 2010; Wirtz et al., 2016).

The collaboration between researchers and nature-based tourism entrepreneurs is instrumental in improving knowledge and mitigating the impacts of adopting a business model without sustainability-related concerns and innovation.

3. Methods

The main objective of this study is to understand how Portuguese NBT entrepreneurs adopt the guiding principles of business model innovation for sustainability (Breuer et al., 2018). Through an exploratory qualitative research design and an inductive approach, we conducted a qualitative data analysis through face-to-face interviews. Data was validated through interview listening, transcription, interpretation, and website data triangulation (Creswell, 2014). The methodology implemented in this study aims to achieve the defined objectives and minimise information misinterpretation (Bryman, 2015). The study comprises two main steps. The first step relates to a previous literature review on the subject under study and identifying research gaps. The second step was selecting the interviewed NBT companies that provided NBT products and had been operating for at least five years.

3.1. Sampling

The selection of NBT companies considered the mainland region of Portugal where they operate (north, centre and south) and the content of the companies' websites (NBT experiences, location, innovative initiatives, sustainability commitment, company's longevity). An inventory of NBT companies was conducted by consulting the entities' websites responsible for licensing NBT companies. The Instituto da Conservação da Natureza (ICNF) registered thirty certified NBT companies and forty-five offering NBT experiences on July 2023. Purposive sampling was used to make the selected sample relevant to the research questions and the study's goals (Bryman, 2012). Companies providing NBT products and operating for at least five years were selected. One of the certified NBT companies accepted our invitation to be interviewed, and twelve companies providing NBT services agreed to participate. The sample includes companies from north to south in Portugal's mainland, evidencing sustainable, long-term,

competitive, and innovative initiatives. The thirteen interviewed entrepreneurs offer diverse experiences, such as birdwatching, Whale and Dolphin watching, Heritage visits, Accommodation, Sustainable tourism, Horseback riding on the beach, Nature Hiking, Gastronomic and Wine experiences, Religious tourism, Environmental education, Geologic walks and Nature conservation. Entrepreneurs specialised in glamping, surfing, extreme activities, and wildlife tourism, such as hunting, did not respond to our solicitation.

3.2. Data collection and analysis

The data of the present study was collected through thirteen semi-structured interviews, considering that semi-structured interviews are flexible, allowing the interviewer to ask more questions and achieve rich, detailed answers (Bryman, 2015). The interviews occurred between July 2019 and December 2019. Eight interviews were face-to-face and five via Skype, with the representatives of the NBT companies (Table 1). Ten interviewees were owners and NBT managers; three were representatives of NBT companies.

Table 4.1. Summary and characterisation of the companies interviewed by region (Author's elaboration)

Entrepreneurs/Entities	Activity	Region of Portugal's mainland
E01	Accommodation- nature experiences; sustainable tourism	Centre
E02	Horseback Riding on the beach	South
E03	Horseback Riding on the beach and other natural areas	South
E04	Whale and dolphin watching; Heritage visits	South
E05	Accommodation- nature experiences	Centre
E06	Hiking in nature; gastronomic and wine experiences; religious tourism	North
E07	Bird watching	Centre
E08	Accommodation, nature experiences, gastronomic and wine experiences	North
E09	Accommodation nature experiences; sustainable tourism	Centre
E10	Accommodation; nature experiences; gastronomic and wine experiences; sustainable tourism	South
E11	Accommodation; nature experiences; gastronomic and wine experiences; sustainable tourism; environmental education	South
E12	Accommodation; nature experiences; gastronomic and wine experiences; sustainable tourism; environmental education; nature conservation	Centre
E13	Pedestrian walks- geology observation; nature experiences	South

The interview was the appropriate strategy to collect information, where we established an active process with each interviewee to produce knowledge (Creswell, 2014). The qualitative research adopted aimed to research authenticity, trustworthiness, and credibility (Creswell, 2014). The study does not reveal the identity of its participants since the identity of the participants for this study is irrelevant. The interviews were recorded with the consent of all participants, after which the recorded file was transcribed and analysed, allowing a systematic approach (Bryman, 2012). Following Bryman (2015), a narrative analysis focused on “What sustainable business model requirements do nature-based tourism companies adopt in their business model?”

An organised interview guide ensured the collected data quality. The interview questions (Annex I) align with the study’s aim and cover the following topics: general information about the company, the main markets for each company, the role of sustainability and innovation on NBT companies’ long-term business, resilience, and competitive advantage. At the end of the interview, managers could speak about other topics not explored.

4. Results

This study analyses information collected through thirteen nature-based tourism (NBT) companies. The accurate analysis of the semi-structured interviews delivered to NBT entrepreneurs allowed the understanding of how these companies align with the basic requirements for modelling sustainability-oriented business (Breuer, 2018). Moreover, the interviews disclosed how NBT companies consider sustainability-oriented goals at their organisation core (Schneider & Clauss, 2019). We conducted a narrative analysis of the interviews. The entrepreneurs talked about the importance of sustainability in their business models, how they create ecological, social, and economic value for the company and for all the stakeholders, how the interviewed NBT companies’ business models evidence the relations with the surroundings, how they consider stakeholders sustainability supporters, and how they integrate an extended value creation. Some answers attest to these statements:

4.1.Sustainability orientation

4.1.1. Environmental sustainability

The interviewees showed a shared commitment to integrating sustainability into their core practices. The emphasis on environmental responsibility was evident, based essentially on conserving biodiversity, natural resources, and the local landscape. Some companies mentioned adopting environmentally friendly technologies and processes, such as implementing mechanisms associated with recycling and reusing materials.

“Nature plays a part in the choice of location; it always plays a part in respecting the vegetation around each of the houses; in other words, we only use plants that are characteristic of the local landscape, and we always respect all the surroundings.”

“Nature is the great golden goose; it is about being able to maintain, look after, and take care of all this environmental part, which supports our activity.”

“Tourists enjoy a well-preserved natural environment, and half an hour from Lisbon, it’s surprising that there is still a place with this level of preservation, with waterfalls...”

“There are always impacts. I am concerned that our impacts are positive, and I convey to our customers that we care for nature and recycling...”

“...the conservation of natural resources is essential; it is fundamental because these resources sustain the activity; if there are no resources, we would not be selling tours because tourists would not be visiting anything.”

“...always on the promotion of biodiversity; in our case, the focus is always on the promotion of biodiversity, then there is a whole social aspect where we try to draw attention to these facts, and perhaps the most concrete example is this open day that our goal is really to raise awareness.”

“We have tried to take action in terms of conservation in everything we do, and I can give you an example: from next year, we are going to go one step further, and a substantial part of all our tours, ranging from 3 to 5 per cent, will go directly to conservation, particularly in the Guadiana valley, which is a protected area where we think makes perfect sense this kind of link between tourism and nature conservation.”

“This concept of self-sustainability is one that we try to preserve, of course, adapted to the present day, but which we try to implement and preserve, and in this sense in terms of resources, whether they be water or solar, whatever they may be, they have been implemented and are increasingly being expanded.”

4.1.2. Social sustainability

The interviews conveyed the need to promote positive socio-cultural impacts but revealed a common imbalance regarding incorporating sociocultural considerations into their business. Two of the companies interviewed showed inclusive practices through promoting partnerships with the local community, positively impacting the region in which they operate.

“...my mother wanted to provide workplaces to the people in the village near the estate; there was much unemployment at the time...”

“...sustainability is essential because we are talking about people who make a living here, and they have to feel that we are committed to this being a business for life.”

Moreover, at the socioeconomic level, the same interviewees expressed being committed to promoting direct economic benefits to their staff.

“One thing I want to highlight is that we need to pay good salaries to our staff ...because they deserve it and because my principle is to share the profit I make with those who work with us.”

“we’re managing to remunerate our staff in a very rewarding way, and they participate in sales. I give them a net commission on sales, and their underpin salaries are already pretty good”.

4.1.3. Economic sustainability

Some companies demonstrated their commitment to balancing profit with social responsibility. Interviewees emphasised the importance of integrating economic sustainability, mentioning that the business supports all the company expenses. Challenges were recognised, including initial investment costs. However, interviewees pointed to the positive results, such as increased brand loyalty and access to new markets. Overall, the interviews reveal economic success as one of their main goals. Nevertheless, we registered the non-existence of a resilient business model that can adapt to changing economic scenarios.

“...we try to make sure that the people who visit that place with us also leave some economic value there.”

“... we’re still covering the large financial loan we took out, and we’re still paying it off; eight years ago, we had a rather stressful situation. Now we have a more stable situation, and although we still have these charges to settle, we can say that our company has entered a cruising phase that allows us to rest easy about it.”

“...when we started, it was difficult to face all the expenses; also, because we didn’t have a structure, the seasonality made our operation very difficult...”

“... I’ve only been working full-time at the company for ten years; at the beginning, I had another activity in the winter, my husband had other projects, and then employing people all year round was difficult.”

“...for a long time, we were three, then we became four and only in recent years have we become seven, and only this year are we eight full-time people and seasonally they double. I can say that in recent years, we have reached this level, and the new investment has helped us a lot in this regard; the first investment we made in the first catamaran in 2010, in 2017, the second catamaran and thus we were able to bring forward the acquisition of this sailboat by three years, which was initially planned for ten years ago. We’ve now been on the market for twenty-one years”.

“... we’re managing to cover our financial responsibilities... we’ve been able to pay the banks, I can tell you that this month we’re going to be able to settle a loan well ahead

of schedule, the company has managed to generate money that allows for this settlement, and that's a good thing."

"Yes, we've been making profits every year. We've been making substantial profits for about five or six years; this takes time; we had a period of growth ... and now we have a stable and interesting economic situation from a financial point of view."

"...we do some tours to other international destinations, which were initially designed for our domestic market, and I'll give you an example: in a month, we have a trip to Estonia for eight days, six Portuguese and six Americans are going; we have a trip to Tanzania in May next year, at the moment we have three Portuguese and almost ten Americans and English, so we have more and more foreigners even on these trips and why, because they are people who have come to Portugal, they like the way we work, they trust us!."

"For me, the keyword is resilience; there is no doubt about that. For example, here we do a lot of peasant economics; an organic farmer farms my land, and he pays me the rent for the land in sweet potatoes..."

"No, we cover the expenses as a whole; otherwise, we wouldn't have survived for 30 years. We have loss-making activities, and some activities pay for others; now, tourism is one of the most profitable activities that helps others, but that's thus how we think it should be".

4.2. Extended value creation

Interviewees emphasised a shift towards a holistic approach beyond traditional economic metrics. Challenges in implementing extended value creation in nature-based tourism were discussed, including environment and heritage conservation, creating a positive social impact, and ongoing education where tourists are considered. However, the general feeling from the interviews was optimism, with the conviction that responsible tourism practices can lead to economic gains and positive environmental and social outcomes.

“...hospitality has to do with “hospital”, with the ability to receive people, to welcome them, to try to look after them as best we can and ideally when they leave in a better condition, physically and spiritually, and that is what we try to do, nothing more.”

“...in the cities where they live, because of the stress, they like to come here and have this silence, where you do not hear cars; you hear the farm machinery and see the beach and hear the noise of the sea and also be relaxed here...”

“...an abandoned village that has its characteristics and so it makes sense to focus on these simple things, to emphasise them, to study them, the herbs for therapeutic use, there are several qualities and characteristics that the landscape has, and that deserves to be studied, valued and presented to those who are interested in getting to know this region...”

“The contact with animals, with nature, moves people a lot, with the sea, for many of them it is the first time they had this experience.”

“The quality of our tours is the guide, the birdwatching, the quality of the accommodation, the meals, the atmosphere we have created over the five, ten or twelve days, and the safety.”

“...sleep well, eat well, know that the products are fresh from the garden; feeling that they are helping the community in some way...”

“We have different things from abroad, such as the experience of human activities.”

“the power of our proposal essentially has to do with the future; people come in depressed and leave a little more energised.”

“...we work together with some researchers who come here, and then we include these aspects in our offer...now there is a lot of research, and people are doing their doctoral theses, biologists, geologists, etc., and it is only now that this is being valued.”

“...we go hiking, but much more than hiking, we help people interpret and tell the stories of the places.”

4.3. Systems thinking

The interviews explored implementing Systems thinking in nature-based tourism, where participants emphasised the commitment to a more comprehensive and interconnected approach to managing their businesses. Interviewees highlighted the recognition of nature-based tourism as a complex system involving diverse elements such as ecosystems, local communities, businesses, and visitors. The interviews reflected a growing awareness of the interconnected nature of its components in the nature-based tourism sector. Adopting systems thinking was seen as a transformative approach, promoting collaboration and a more holistic understanding of the dynamic relationships within nature-based tourism.

“...we invest a lot in partnerships with wine producers, wineries, oysters, which have great potential in the estuary, Azeitão cheese, Azeitão pies, sweets, wines, and we end up bringing what is on land to the sea and providing different exclusive and high-quality products produced by great producers.”

“We recently linked up with the guardians of Serra da Estrela, with the Estrela Geopark, and now we are formalising a partnership with the Cervas association and are planning other partnerships.”

“local businesses with complementary activities, some linked to nature and convenience activities, such as meal delivery services...”

“The Municipality of Mértola has always been our partner in attracting foreign tourists to Portugal.”

“...we have partnerships with Astronomy Observatories; ...and with a biologist who runs tours inside the estate but who also goes outside the estate to show clients the local birds, and ethnobotanical tours, where he points out the different flora that can be found inside the estate and their possible uses, how the local people use them or have used them over generations and then takes this approach, a partnership with two archaeologists and with Lago Alqueva for water activities. ”

“We have several partners, such as accommodation, taxis for the luggage, meal providers, etc.

4.4. Stakeholder integration

The interviewees stressed the diversity of actors involved in nature-based tourism, showing an ability to adopt measures geared towards systemic thinking, as described above, but need help setting out an innovative sustainable business model able to attract stakeholders who share the same principles. Only one of the interviewees referred to the stakeholder integration guiding principle.

“We develop our work and project and attract partners interested in certain areas such as architecture, interior design, nature, and simplicity, linked to this holistic perspective and who identify with our projects, with the peacefulness...”

5. Discussion and conclusions

This study’s theoretical first contribution encompasses understanding how entrepreneurs consider sustainability at the core of their organisations (Schaltegger et al., 2012a) and secondly identifying what sustainable business model requirements nature-based tourism companies adopt in their business model. A third theoretical contribution relates to understanding the different perceptions between respondents and the constraints of the NBT entrepreneurs following the four guiding principles proposed by Breuer et al. (2018).

This study is supported by relevant literature and the narrative analysis of the semi-structured interviews conducted with the thirteen NBT entrepreneurs.

Regarding the first and second contributions of this study, we can say that, in general, the interviewed NBT entrepreneurs recognise the importance of being sustainable companies. Still, they are fundamentally committed to environmental and economic sustainability. This is evident from their fulfilment of legal obligations, particularly at an environmental and economic level. The socio-cultural component of sustainability is not very explicit in some of the cases analysed. The NBT companies in this study show little explicit commitment to social responsibility and their innovative initiatives are mostly limited to introducing a computer and

publicising on social networks. The results show also that the companies participating in this study have a weak stakeholder network and are unaware of their customers' needs.

Considering the third contribution of this study, what are the constraints of the NBT entrepreneurs following the four guiding principles proposed by Breuer et al. (2018), we can say that in relation to the first guiding principle, Sustainability orientation, NBT companies are primarily aligned with environmental sustainability, fulfilling the legal requirements. In the economic dimension of sustainability, companies have demonstrated their ability and concern to promote economic growth. Regarding the social dimension of sustainability, the two companies clearly and unequivocally express their commitment to making a social contribution through job creation and fair salaries.

When analysing the second guiding principle, Extended value creation, the results point out that Portuguese NBT entrepreneurs align with ecological value creation and value for the company. The third guiding principle, Systems thinking, revealed that some interviewees value the relations between the company and the surroundings, expressing a willingness to innovate the existing business model. Regarding the last guiding principle, Stakeholder integration, only one interviewee revealed a clear commitment to integrating specific stakeholders to support sustainability orientation, extended value creation, and systems thinking.

Summarising, the results show that the business models of Portuguese NBT companies prioritise sustainability's environmental and economic dimensions, with notable shortcomings in terms of the social dimension. Some relevant concerns regarding extended value creation and system thinking were noticed, where interviewees create diverse relationships between the company and its surroundings, experience innovation, and focus on product innovation rather than process innovation. Concerning the fourth guiding principle, the interviewees revealed difficulties integrating stakeholders, reflecting an individualistic stance in developing their businesses.

The results stress Reinhold et al. (2017) assumptions that NBT companies need to improve sustainability. The companies participating in this study evidenced difficulties in following the four guiding principles proposed by Breuer et al. (2018). This observation may relate to the need for more business management literacy by NBT entrepreneurs, inadequately qualified labour, and feeble adherence to new technologies (Biloslavo et al., 2018). Another reason for the difficulty shown by NBT entrepreneurs in implementing Breuer's four guiding principles could be related to the limited research on tourism innovation (Hjalager, 2010), (Täuscher &

Abdelkafi, 2018; Geissdoerfer et al., 2017; Dentchev et al., 2018), on business sustainability and BMs for NBT (Biloslavo et al., 2018; Sahebalzamani & Bertella, 2018b; Reinhold et al., 2017b) and the lack of appropriate design for SBM. Moreover, few studies related to NBT address sustainability aspects (Reinhold et al., 2017), integrating all sustainability dimensions (Biloslavo et al., 2018), which may be the root of the difficulty in adopting Breuer's four guiding principles.

NBT companies sustainably committed benefit from ISBM (Nasiri et al., 2018), ecologically robust and socioeconomically sustainable (Täuscher & Abdelkafi, 2018). In addition, improving BM research in tourism (Reinhold et al., 2017b) and on ISBM for NBT (Geissdoerfer et al., 2018) goes beyond the economic dimension and improves research into sustainability dimensions such as environment, sociocultural and corporate sustainability (Lüdeke-Freund & Dembek, 2017; Schaltegger et al., 2016). It is vital to include environmental, economic, and social dimensions in NBT companies' SBM (Joyce & Paquin, 2016; Biloslavo et al., 2018). Lüdeke-Freund and Schaltegger (2023) discuss the relevance of engaging in the business model for sustainability, emphasising the importance of understanding whether companies are on the right path to sustainable value creation towards an ecologically and socially sustainable business model. The planned business model will always differ from the realised one (Lüdeke-Freund & Schaltegger, 2023). The four major guiding principles by Breuer et al. (2018) help shape innovative business models towards sustainability (Lüdeke-Freund & Schaltegger, 2023). Yet, the four principles do not guarantee business sustainability (Lüdeke-Freund & Schaltegger, 2023). Still, they play a significant role in shaping innovative and sustainable business models based on sustainability orientation, extended value creation, introducing systems thinking and integrating all stakeholders (Breuer et al., 2018).

It is crucial to consider that NBT companies tend to be small or medium-sized, family-owned enterprises França et al. (2017) and should define their future based on sustainable initiatives (Schneider & Clauss, 2019). Innovative sustainable business models positively impact cooperative sustainability and sustainable innovation (Boons & Lüdeke-Freund, 2013), sustainable value and reliability (Schneider & Clauss, 2019). The development of ISBM for NBT companies requires adapting and modifying the existing BM (Schaltegger et al., 2012b). Following Lüdeke-Freund and Schaltegger (2023), we corroborate that innovation is not a panacea. Nevertheless, filling the gap in tourism publications on business sustainability and BM (Reinhold et al., 2017), developing innovative sustainable business models for NBT

increases their complexity, promotes the development of new BMs, introduces innovation and sustainability, and value creation, recognises the importance of all stakeholders, and considers customers in all stages (Reinhold et al., 2017). Innovative sustainable business models align with the four guiding principles of Breuer et al. (2018). Adopting the four guiding principles in innovative sustainable business models helps companies commit to sustainable value creation, introduce systemic thinking, and promote stakeholder support (Lüdeke-Freund & Schaltegger, 2023).

Thus, considering the study's results, the business models' fragility can be interpreted in two ways. On the one hand, it could be interpreted as a lack of commitment to sustainability by the NBT companies. The other interpretation is a need for knowledge and specific skills to implement sustainable business model requirements. The second option is the most credible since the entrepreneurs generally express environmental awareness and the need to make their businesses last over time. Therefore, investing in training for Portuguese NBT entrepreneurs is an urgent action to fulfil basic knowledge needs and to improve the performance of these companies in terms of sustainability, driven by the guiding principles proposed by Breuer et al. (2018).

Several specific initiatives are set out for these entrepreneurs to help improve their management skills and their ability to improve companies' sustainability. As a starting point, we suggest NBT companies thoroughly assess their environmental, social, and economic impacts.

The initiatives are presented as follows:

- (1) Identify areas where the operations might negatively affect the ecosystems and define targeted measures to mitigate the identified impacts.
- (2) Regarding the environmental dimension of sustainability, establishing and enforcing guidelines for responsible wildlife observations, including maintaining a safe distance from animals, minimising noise, limiting the number of visitors in sensitive areas, and avoiding any activities that could disturb or harm the wildlife. Implementing initiatives driven towards good management of natural resources such as water and energy consumption. Reducing the production of solid waste by implementing responsible purchasing policies. Set out a plan for dealing with the waste produced. Reducing gas emissions and noise.
- (3) Implement effective waste management practices through reducing, reusing, and recycling wherever possible.
- (4) Complement the previous initiatives by providing guests with reusable items, encouraging them to minimise waste during NBT experiences.
- (5) Invest in energy-efficient technologies and practices in NBT

companies, using renewable energy sources, optimising transportation routes to reduce fuel consumption, and implementing energy-saving measures in accommodations. (6) Develop and support initiatives contributing to local biodiversity conservation by cooperating on habitat restoration projects, reforestation efforts, and partnerships with local conservation organisations. These biodiversity initiatives should include the staff and tourists. Adhering to certifications helps companies implement an internal sustainable management system, improving their overall performance and, therefore, aligning with the principles of sustainability.

Regarding the social dimension of sustainability, NBT entrepreneurs should involve local communities in decision-making processes, support community projects and hire locally whenever possible. NBT experiences may integrate tourists' educational initiatives to raise awareness about local ecosystems, wildlife, and conservation efforts. Economic initiatives may be designed to support local businesses, artisans, and suppliers, such as farmers and fishermen, ensuring that the economic benefits of tourism reach the communities hosting the NBT activities. The previous financial measures positively impact environmental and social levels, as they contribute to decreasing product transportation and reducing importation impacts, improving local production, helping to settle the populations, avoiding the desertification of territories, and fostering a sense of pride and ownership. Moreover, NBT companies must communicate their sustainability commitment, which helps to convey to suppliers and stakeholders' companies' position about the business model implemented and to attract the right stakeholders. The initiatives mentioned above help NBT entrepreneurs to be driven by the four guiding principles proposed by Breuer et al. (2018) and thus adopt an innovative sustainable business model.

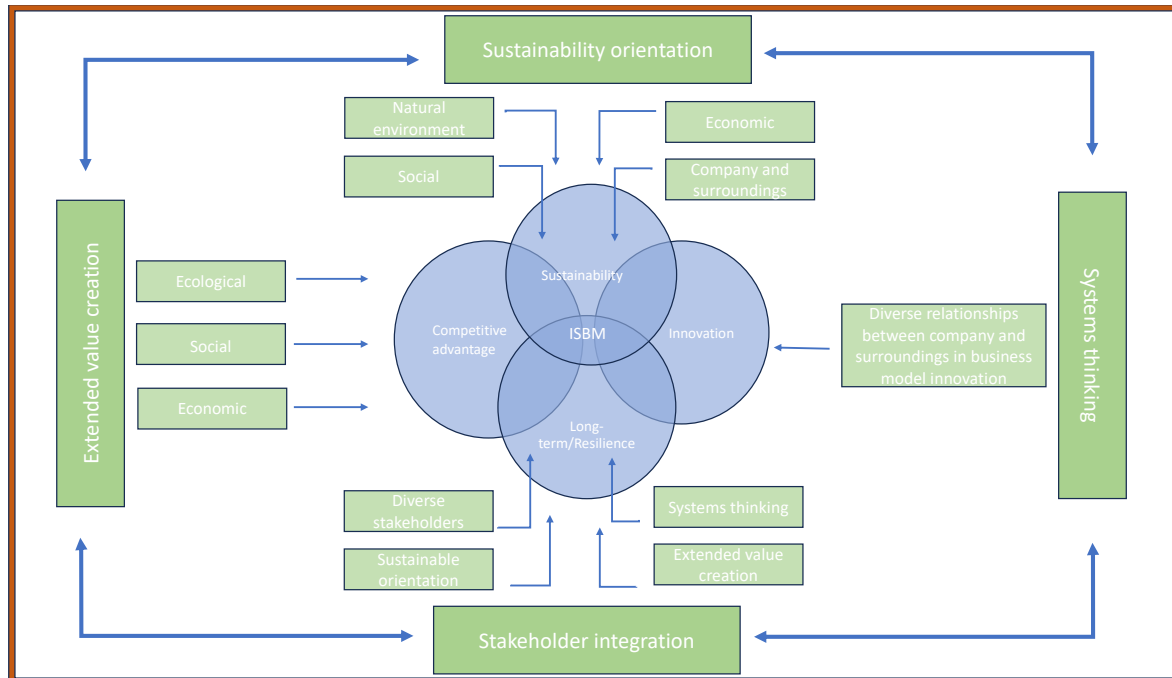
In study II, the information compiled in the interviews and the analysis of the data allowed for an understanding of how nature-based tourism entrepreneurs consider innovation and sustainability in their business models, as well as their perception of the importance of these drivers for the competitiveness and longevity/resilience of their businesses. This stage of our research was decisive in identifying four drivers of innovative sustainable business models (sustainability, innovation, competitive advantage, and Long-term/resilience) and proposing an innovative sustainable business model for nature tourism companies.

Based on the research carried out in study II, the need to understand what sustainable business model requirements nature-based tourism companies adopt in their business models was identified.

The results obtained in study III show that NBT companies are committed to environmental sustainability and fulfil legal environmental requirements. Some of these companies have shown concern and awareness of social responsibility. Regarding the economic dimension of sustainability, these companies revealed a stable situation. Some entrepreneurs reveal a vision driven by value creation and systemic thinking. However, the difficulty in integrating stakeholders is evident.

The results of Study II and Study III show an interconnection between the guiding principles of Breuer et al. (2018) and the four drivers identified in Study II (sustainability, innovation, competitive advantage, and long-term/resilience), summarised in Figure 1. The guiding principles proposed by Breuer et al. (2018) are enablers of innovation, sustainability in its various dimensions, competitiveness, and long-term business/resilience, facilitating the operationalisation of innovative and sustainable business models. Innovative and sustainable business models must adopt the principle of sustainability orientation, contemplate the Extended value creation principle, incorporate the Systemic thinking principle, and integrate all stakeholders to promote sustainable, innovative, competitive, and long-term/resilient businesses.

Figure 4.1. Interconnection between the guiding principles of Breuer et al. (2018) and the four drivers identified in Study II (sustainability, innovation, competitive advantage, and long-term/resilience). ■ Study III ■ Study II (Author's elaboration)



Our results show that the BMs of NBT companies do not fulfil the basic requirements of innovative sustainable business models (ISBMs) (Chesbrough, 2010; Boons & Lüdeke-Freund, 2013; Breuer et al., 2018; Bocken et al., 2018; Pieroni et al., 2019), which justifies the proposal of an innovative and sustainable business model presented in Study II.

This study confirms the importance of adopting a comprehensive view of business models, such as innovative and sustainable business models for NBT companies (e.g. Baden-Fuller & Morgan, 2010; Wirtz et al., 2016). Results underline the relevance of developing an ISBM framework for NBT companies, an emergent field of research (Geissdoerfer et al., 2018), as proposed in the second study included in this thesis.

The importance of this research is related to understanding what sustainable business model requirements nature-based tourism companies adopt in their business model, following the principles proposed by Breuer et al. (2018). The results express the mediating role played by the four guiding principles proposed by Breuer et al. (2018) in developing innovative business models for sustainability. They also show that Portuguese NBT entrepreneurs demonstrate

some constraints when implementing these principles. However, the results provide evidence, albeit partially, that these entrepreneurs want to promote long-term business and are concerned about the environmental impact. This study helps outline how to compare different BMs, assessing their sustainability potential to establish an overarching structure (Lüdeke-Freund et al., 2019). The results of this study contribute to improving the proposal for an innovative and sustainable business model of study II, particularly in terms of strengthening the integration of the various stakeholders, with an approach that is geared towards sustainability, systemic thinking, and extended value creation. The proposed ISBM framework proposed in study II also benefits from the results obtained in this study in terms of broadening companies' relationships with their surroundings to allow NBT companies to innovate their business models. The research enabled us to identify the need to strengthen the relationship between academia and NBT entrepreneurs to help these entrepreneurs to overcome the difficulties identified in this study and thus achieve more competitive, resilient, innovative, and sustainable companies.

Portugal has excellent potential for NBT growth, where the extensive coastline, with its long sandy beaches, biodiversity, mountains, and landscapes, contribute significantly. In addition, we must consider the country's dimension, allowing for relatively short journeys, the climate, the number of daylight hours, safety, gastronomy, high-quality products, the peacefulness of the inland regions, the hotel offer and the friendliness of the people. All these assets contribute significantly to a diversified offer throughout the year. Thus, Portugal should invest in a model for nature-based tourism based on sustainability principles to prevent over-tourism, seasonality, local community protection and engagement, and economic development.

The study encompasses a limited number of Portuguese NBT managers, which may explain a general fragmented knowledge about NBT, particularly concerning innovation, business constraints, and economic impacts (Fredman & Tyrväinen, 2010). This limitation highlights research difficulties, leading to the absence of an adequate SBM design addressing all dimensions of sustainability (Fredman & Tyrväinen, 2010; Fredman et al., 2012) and the access to primary data on BM for NBT (Reinhold et al., 2018).

Future research should focus on strengthening the relationship between academia and entrepreneurs, thus helping entrepreneurs to innovate their businesses towards sustainability.

Accordingly, future research should focus on: (i) adapting business models to the country's context and the needs of sustainability-driven companies.; (ii) promote experimentation with new innovative and sustainable business models in NBT companies; (iii) promote new ways of innovating business models for sustainability with a focus on process innovation rather than product innovation. Future research should focus on other countries and continents to understand whether NBT BMs' weaknesses and limitations are geographically restricted.

6. References

- Baden-Fuller, C., & Morgan, M. S. (2010). Business models as models. *Long Range Planning*, 43(2–3), 156–171. <https://doi.org/10.1016/j.lrp.2010.02.005>
- Biloslavo, R., Bagnoli, C., & Edgar, D. (2018). An eco-critical perspective on business models: The value triangle as an approach to closing the sustainability gap. *Journal of Cleaner Production*, 174, 746–762. <https://doi.org/10.1016/j.jclepro.2017.10.281>
- Bocken, N. M. P., Pauw, I. De, Bakker, C., Grinten, B. Van Der,. (2016). Product design and business model strategies for a circular economy. *Journal of Industrial and Production Engineering*, 1015, 1–12. <https://doi.org/10.1080/21681015.2016.1172124>
- Bocken, N. M. P., Short, S. W., Rana, P., & Evans, S. (2014). A literature and practice review to develop sustainable business model archetypes. *Journal of Cleaner Production*, 65, 42–56. <https://doi.org/10.1016/j.jclepro.2013.11.039>
- Bocken, N., Short, S., Rana, P., & Evans, S. (2013). A value mapping tool for sustainable business modelling. *Corporate Governance (Bingley)*, 13(5), 482–497. <https://doi.org/10.1108/CG-06-2013-0078>
- Boons, F., & Lüdeke-Freund, F. (2013). Business models for sustainable innovation: State-of-the-art and steps towards a research agenda. *Journal of Cleaner Production*, 45, 9–19. <https://doi.org/10.1016/j.jclepro.2012.07.007>
- Breuer, H., Fitcher, K., Tiemann, I. (2018). Sustainability-oriented business model development : principles , criteria and tools. *Int. J. Entrepreneurial Venturing*, 10(2), 256–286. <https://doi.org/10.1504/ijev.2018.10013801>
- Bryman, A. (2012). *Social Research Methods* (4th ed.). by Oxford University Press Inc., New York.
- Bryman, A. (2015). The nature and process of social research. *Social Research Method*, 3–16.
- Chesbrough, H. (2007). Business model innovation: It's not just about technology anymore. *Strategy and Leadership*, 35(6), 12–17. <https://doi.org/10.1108/10878570710833714>
- Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches* (Vicki Knight, Ed.; 4th Editio). SAGE Publications Ltd.
- Dentchev, N., Rauter, R., Jóhannsdóttir, L., Snihur, Y., Rosano, M., Baumgartner, R., Nyberg, T., Tang, X., van Hoof, B., & Jonker, J. (2018). Embracing the variety of sustainable business models: A prolific field of research and a future research agenda. *Journal of Cleaner Production*, 194, 695–703. <https://doi.org/10.1016/j.jclepro.2018.05.156>
- Doleski., O. D. (2015). *Integrated Business Models:Applying the St. Gallen Management Concept to Buisness Models*. Springer Gabler. <https://doi.org/10.1007/978-3-658-09698-4>
- Espinier, S., Orchiston, C., & 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*, 25(10), 1385–1400. <https://doi.org/10.1080/09669582.2017.1281929>

- França, C. L., Broman, G., Robèrt, K. H., Basile, G., & Trygg, L. (2017). An approach to business model innovation and design for strategic sustainable development. *Journal of Cleaner Production*, 140, 155–166. <https://doi.org/10.1016/j.jclepro.2016.06.124>
- Fredman, P., & Tyrväinen, L. (2010). Frontiers in nature-based tourism. *Scandinavian Journal of Hospitality and Tourism*, 10(3), 177–189. <https://doi.org/10.1080/15022250.2010.502365>
- Fredman, P., Wall-Reinius, S., & Grundén, A. (2012). The Nature of Nature in Nature-based Tourism. *Scandinavian Journal of Hospitality and Tourism*, 12(4), 289–309. <https://doi.org/10.1080/15022250.2012.752893>
- Geissdoerfer, M., Morioka, S. N., de Carvalho, M. M., & Evans, S. (2018). Business models and supply chains for the circular economy. *Journal of Cleaner Production*, 190, 712–721. <https://doi.org/10.1016/j.jclepro.2018.04.159>
- Geissdoerfer, M., Savaget, P., Bocken, N. M. P., & Hultink, E. J. (2017). The Circular Economy – A new sustainability paradigm? *Journal of Cleaner Production*, 143, 757–768. <https://doi.org/10.1016/j.jclepro.2016.12.048>
- Geissdoerfer, M., Savaget, P., & Evans, S. (2017). The Cambridge Business Model Innovation Process. *Procedia Manufacturing*, 8(October 2016), 262–269. <https://doi.org/10.1016/j.promfg.2017.02.033>
- Geissdoerfer, M., Vladimirova, D., Fossen, K. Van, & Evans, S. (2018). Product, service, and business model innovation: A discussion. *Procedia Manufacturing*, 21, 165–172.
- Hjalager, A. M. (2010). A review of innovation research in tourism. *Tourism Management*, 31(1), 1–12. <https://doi.org/10.1016/j.tourman.2009.08.012>
- Jensen, Ø., & Prebensen, N. (2015). Innovation and Value Creation in Experience-based Tourism. *Scandinavian Journal of Hospitality and Tourism*, 15, 1–8. <https://doi.org/10.1080/15022250.2015.1066093>
- Joyce, A., & Paquin, R. L. (2016). The triple layered business model canvas: A tool to design more sustainable business models. *Journal of Cleaner Production*, 135, 1474–1486. <https://doi.org/10.1016/j.jclepro.2016.06.067>
- Kennedy, S., & Bocken, N. (2019). *Innovating Business Models for Sustainability : An Essential Practice for Responsible Managers*. January 2020.
- Lüdeke-Freund, F., & Dembek, K. (2017). Sustainable business model research and practice: Emerging field or passing fancy? *Journal of Cleaner Production*, 168, 1668–1678. <https://doi.org/10.1016/j.jclepro.2017.08.093>
- Lüdeke-Freund, F., Froese, T., & Schaltegger, S. (2019). *The role of business models for sustainable consumption; a pattern approach*.
- Ludeke-Freund, F; Gold, S; Bocken, N. M. P. (2019). A Review and Typology of Circular Economy Business Model Patterns. *Journal of Industrial Ecology*, 23(1), 36–61. <https://doi.org/10.1111/jiec.12763>
- Lüdeke-Freund, F., & Schaltegger, S. (2023). Business Model Innovation for Sustainability. *Corporate Sustainability. Managing Responsible Business in a Globalised World (2nd Ed.)*, 2023, 388–411.

- Magretta, J. (2002). Why business models matter. *Harvard Business Review*, 3–8.
- Massa, L., Tucci, C. L., & Afuah, A. (2017). A critical assessment of business model research. *Academy of Management Annals*, 11(1), 73–104. <https://doi.org/10.5465/annals.2014.0072>
- Nasiri, M., Rantala, T., Saunila, M., Ukko, J., & Rantanen, H. (2018). Transition towards sustainable solutions: Product, service, technology, and business model. *Sustainability (Switzerland)*, 10(2). <https://doi.org/10.3390/su10020358>
- Prange, C., & Schlegelmilch, B. B. (2016). Towards a balanced view of innovations. *Management Decision*, 54(2), 441–454. <https://doi.org/10.1108/MD-05-2015-0198>
- Reinhold, S., Beritelli, P., & Grünig, R. (2018). A business model typology for destination management organisations. *Tourism Review*, TR-03-2017-0065. <https://doi.org/10.1108/TR-03-2017-0065>
- Reinhold, S., Zach, F. J., & Krizaj, D. (2017a). Business models in tourism: a review and research agenda. *Tourism Review*, 72(4), 462–482. <https://doi.org/10.1108/TR-05-2017-0094>
- Sahebalzamani, S., & Bertella, G. (2018a). Business models and sustainability in nature tourism: A systematic review of the literature. *Sustainability (Switzerland)*, 10(9), 1–15. <https://doi.org/10.3390/su10093226>
- Schaltegger, S., Hansen, E. G., & Lüdeke-Freund, F. (2016). Business Models for Sustainability: Origins, Present Research, and Future Avenues. *Organization and Environment*, 29(1), 3–10. <https://doi.org/10.1177/1086026615599806>
- Schaltegger, S., Lüdeke-Freund, F., & Hansen, E. G. (2012a). Business cases for sustainability: The role of business model innovation for corporate sustainability. *International Journal of Innovation and Sustainable Development*, 6(2), 95–119. <https://doi.org/10.1504/IJISD.2012.046944>
- Schaltegger, S., & Wagner, M. (2011). *Sustainable Entrepreneurship and Sustainability Innovation: Categories and Interactions*. 237(July 2010), 222–237.
- Schneider & Clauss. (2019). Business Models for Sustainability : Choices and Consequences. *Organization & Environment*, May. <https://doi.org/10.1177/1086026619854217>
- Snihur, Y., & Bocken, N. (2022). *A call for action : The impact of business model innovation on business ecosystems , society , and planet*. January. <https://doi.org/10.1016/j.lrp.2022.102182>
- Souto, J. E. (2015). Business model innovation and business concept innovation as the context of incremental innovation and radical innovation. *Tourism Management*, 51, 142–155. <https://doi.org/10.1016/j.tourman.2015.05.017>
- Stubbs, W., & Cocklin, C. (2008). Conceptualising a “sustainability business model.” *Organization and Environment*, 21(2), 103–127. <https://doi.org/10.1177/1086026608318042>
- Täuscher, K., & Abdelkafi, N. (2018). Scalability and robustness of business models for sustainability: A simulation experiment. *Journal of Cleaner Production*, 170, 654–664. <https://doi.org/10.1016/j.jclepro.2017.09.023>
- Teece, D. J. (2010). Business models, business strategy and innovation. *Long Range Planning*, 43(2–3), 172–194. <https://doi.org/10.1016/j.lrp.2009.07.003>

- Tidd, J., & Bessant, J. (2018). Innovation Management Challenges: From Fads To Fundamentals. *International Journal of Innovation Management*, 22(5).
<https://doi.org/10.1142/S1363919618400078>
- Upward, A., & Jones, P. (2016). *An Ontology for Strongly Sustainable Business Models : Defining an Enterprise Framework Compatible With Natural and Social Science*.
<https://doi.org/10.1177/1086026615592933>
- Wirtz, B. W., Pistoia, A., Ullrich, S., & Göttel, V. (2016). Business Models: Origin, Development and Future Research Perspectives. *Long Range Planning*, 49(1), 36–54.
<https://doi.org/10.1016/j.lrp.2015.04.001>
- Zott, C., Amit, R., & Massa, L. (2011). The Business Model: Recent Developments and Future Research. *Journal of Management*, 37(4), 1019–1042.
<https://doi.org/10.1177/0149206311406265>

Annex C

(Author's elaboration)

Themes	Interview Questions	Keywords
Introduction	Introduction of the research. Information on ethics, confidentiality and informed consent. •What is your company's primary area(s) of expertise? •Which NBT activities does your company carry out? •Which of these activities are directly linked to nature? •If you provide other than NBT activities, what % of the turnover does NBT business represent? •Do you carry out NBT activities all year round (if not, at what times of the year)? •What was the primary motivation for launching a "nature tourism" business? •How many employees does your company have? •What specific training do you (or your employees) have for your nature business? •How relevant is the hiring of qualified employees? •Do the activities/services you develop and consider as "of nature" sufficiently remunerate the company? And if not, what role do they play in the company's offer portfolio (assuming the whole value proposition of the company)? Which are the leading infrastructures/equipment used in your business?	Informed consent; Voice recorder; General profile; Types of offer; Companies size, history, location
Sustainability	•How do you understand sustainability in NBT companies? •How is your company sustainably committed? •Do you think sustainability is an asset in NBT? •Which are the primary natural resources available in NBT? •How is the state of the art of nature-based tourism (NBT) in Portugal? •How are NBT companies committed to natural resource conservation? •How do NBT companies adopt sustainability principles? •How do you organise/structure your activities/services in nature? •What is nature for you? •What about wildlife? Does this concept make sense in Portugal (for you and your clients)? •What kind of scenery/nature is involved in your offer? •How can your activity affect natural resources? •Do you have evidence that a company's circular economy minimises resource use, enhances competitive advantage and long-term business, and improves resilience? •How do you consider sustainability in your business model?	Sustainability concept; Environment sustainability; Sustainable Tourism; Natural resources impact; Nature experiences; Circular economy
Innovation	•How do NBT companies adopt innovation?	Innovation in NBT; Creativity;

	•How relevant are creativity, a new way of thinking and strategic innovation in your company? •From a technological point of view, which are the leading technologies used in your business? •How do you understand innovation in NBT companies' business model? •To what extent does your offer provide high-quality and innovative experiences? •What kind of business opportunities can you identify in nature tourism? (Creativity)	Technology and Innovation;
Long-term Business/Resilience	•How relevant is the state of conservation of natural resources for your activity and business performance? •Which are the main driving forces for your company's decision-making? •To what extent is your company's business model dynamically committed to maintaining a long-term business? •What are the implications of nature conservation and biodiversity policies (national and international) in your business? •Do you feel that cooperation can be an asset in long-term business?	Long-term NBT business; Nature conservation and NBT long-term business/Resilience; Cooperation and long-term business/Resilience
Competitive advantage	•Which nature attractions do you consider critical to developing your business? •What are the determining factors to improve competitive advantage in your business? •What is your business value proposition? •What value proposition do you think you provide for your customers? •How does the existence of national parks impact your business? Negatively or positively? •Do you feel that cooperation can be an asset in competitive advantage? •How do you consider competitive advantage in your business model?	Nature assets; Driving factors; Value proposition; Cooperation
Market and client profiles	•What are the main markets you work with? •Which client profile do you have for the different services? •What do these clients expect from the services/activities you develop in nature?	Market; Client profile; Client expectations
Conclusion	•Would you like to talk about any other aspect not mentioned? •To what extent is nature tourism research important for you (your business)? •Would you be interested in receiving the final document?	

Chapter 5

Conclusions

5.1. Studies' contributions to the specific research objectives

This research aimed to analyse business models in nature-based tourism companies and extract valuable insights that could contribute to the existing body of knowledge.

This chapter discusses the path taken to achieve the specific objectives, which supported the overall conclusions of this research, the theoretical and management implications, and identifying limitations and areas for future research.

The three studies that make up this thesis were developed sequentially to achieve the proposed objectives:

- (i) understand the existing nature-based tourism business models
- (ii) understanding sustainability and innovation in Nature-Based Tourism business models
- (iii) understand nature-based tourism entrepreneurs' perceptions of sustainability, innovation, competitive advantage, and long-term business/ resilience in their business models
- (iv) propose an innovative sustainable business model for nature-based tourism companies
- (v) understand what sustainable business model requirements nature-based tourism companies adopt in their business model following Breuer et al. (2018) guiding principles.

This section discusses each study's contribution to achieve the research's specific objectives.

Study I- Understanding sustainability and innovation in Nature-Based Tourism business models

The first study's contributions relate to the objectives of (i) understanding the existing nature-based tourism business models and (ii) understanding sustainability and innovation in nature-based tourism business models. The comprehensive literature review allowed performing an understanding of innovation and sustainability in nature-based tourism business models and their repercussions on long-term business and competitiveness. This study also identified the fundamental drivers of an innovative sustainable business model for nature-based tourism.

The study presents a systematic literature review of 77 articles on the established research areas, yielding new knowledge and future research paths. The study summarises relevant articles published between 2002 and 2023. The comprehensive review unveils limited research on tourism innovation. The appropriate design for sustainable business models, business sustainability, and business models for nature-based tourism, the understanding of innovation and sustainability in nature-based tourism business models and its repercussions on long-term business and competitiveness. The study overviews the reviewed articles and proposes definitions of the key underlying concepts- sustainability, nature-based tourism, and business model. The study pinpoints several research gaps, such as the need to conduct proper research in tourism, namely on nature-based tourism (Reinhold et al., 2017), on innovation, sustainability, and innovative sustainable business models in nature-based tourism, to better understand nature-based tourism supply (Boons & Lüdeke-Freund, 2013; Fredman & Tyrväinen, 2010; Geissdoerfer et al., 2018; Rantala et al., 2018).

Study II- Analysing the perceptions of nature-based tourism entrepreneurs, public institutions, and NGOs on the relevance of sustainability and innovation in nature-based tourism business models

Study 2 performs an analysis of the perceptions of nature-based tourism entrepreneurs, public institutions, and NGOs on the relevance of sustainability and innovation in nature-based tourism business models supported by relevant literature and the results of the semi-structured

interviews with the managers of several nature-based tourism companies, public institutions, and one NGO. The study relates to the specific research objective (iii) to understand nature-based tourism entrepreneurs' perceptions of sustainability, innovation, competitive advantage, and long-term business/ resilience in their business models and (iv) to propose an innovative sustainable business model for nature-based tourism companies. The study analyses the perceptions of nature-based tourism entrepreneurs, NGO, and Public Institutions on four drivers: sustainability, innovation, competitive advantage, and long-term business/resilience in nature-based tourism. The results identified companies with small teams, family-owned, and the majority with no appropriate knowledge and skills to adopt innovative proposals; nature-based tourism entrepreneurs are oriented toward ecological sustainability, with apparent gaps in sustainability's socio-cultural and economic dimensions. The economic dimension of sustainability is understood through a limited perspective, where nature-based tourism companies pay salaries, taxes, and rents. The research revealed that nature-based tourism entrepreneurs have an inaccurate view of sustainability.

The proposed ISBM framework (Study II Figure 6) is inspired by previous research on business model development, such as Osterwalder and Pigneur (2010) and Bocken et al. (2018). The proposed framework follows Osterwalder and Pigneur (2010), which adds the capacity of nature-based tourism companies to offer, capture, create, and deliver value in line with the five principles of the UN SDGs, the 5P's - People, Planet, Prosperity, Partnership, and Peace, in line with current consumers' demand. The model provides a new approach to an innovative sustainable business model, where the 5Ps support value proposition, capture, creation, and delivery. Customers' competitive offers, fair prices, needs, and expectations are also considered and supported by the 5Ps. The model aims to drive nature-based tourism managers to introduce innovation and sustainability, fundamental assets to improve competitiveness and long-term/resilient NBT business.

The study contributions can be considered at three levels. First, the study's theoretical contributions are directly related to identifying the perceptions of nature-based tourism managers, public institutions, and the NGO about sustainability and innovation, long-term business, resilience, and competitive advantage in nature-based tourism companies. Secondly, the study contributes to the literature by characterising Portuguese nature-based tourism companies' business models, focusing on their commitment to a sustainable development model, and understanding how they align with an innovative sustainable tourism business

model. This study identified four drivers of an innovative sustainable business model: innovation, sustainability, competitive advantage and long-term/resilience. Finally, the study proposes a framework for an innovative sustainable business model for nature-based tourism companies.

Study III- Business models for Nature-based Tourism companies: the Adoption of sustainable requirements

Study III aims to understand what sustainable business model requirements nature-based tourism companies adopt in their business model following Breuer et al. (2018) guiding principles, as defined in objective (v). This study adopted an exploratory qualitative research design through an inductive approach, and thirteen interviews were delivered to Portuguese nature-based tourism entrepreneurs. The contact with the nature-based tourism entrepreneurs allowed for identifying the foremost entrepreneurs' limitations in innovating their business models and promoting a discussion on entrepreneurs' constraints in adopting these principles. The interviews disclosed how entrepreneurs integrate sustainability principles (such as environmental, social and economic) into companies' business models and their relationship with extending value creation, implementing business innovation through system thinking and integrating stakeholders towards sustainability orientation. The study summarises the most relevant interview results according to the four principles of business model innovation for sustainability proposed by Breuer et al. (2018). It outlines how the Portuguese NBT companies adopt Breuer et al. (2018) guiding principles of business model innovation for sustainability. The results confirm the relevance of developing an innovative sustainable business model framework for nature-based tourism companies, as proposed in the second study.

5.2. General Conclusions

This thesis conveys an integrated discussion based on the three studies developed, yielding a theoretical framework for an innovative sustainable business model for nature-based tourism. It provides the perceptions of nature-based tourism entrepreneurs on how their companies are orientated according to the principles of innovation and sustainability and on their difficulties and limitations in introducing innovation and sustainability into their businesses. Moreover, it unveils the impacts of the absence of sustainability and innovation on competitiveness and long-

term /resilient in nature-based tourism businesses. The nature-based tourism business model proposal benefits from the research on the nature-based tourism companies who voluntarily agreed to participate in this study.

The research encompasses relevant literature and data resulting from the interaction with the different players, identifying deficient business models designed for nature-based tourism, explicitly incorporating a conscious and integrated vision of sustainability and an innovative positioning, which affects, for example, the competitiveness and resilience of companies. This research adds complexity to understanding the business models in nature-based tourism.

The research undertook a careful and extensive literature collection that motivated the efforts and the decisions implemented. As a result of the literature review, the need to conduct proper research on business model innovation for sustainability for nature-based tourism was noticed. The literature review identified an interrelationship between sustainability and innovation, where both improve companies' competitive advantage and long-term business/resilience. However, the successful adoption of sustainability principles and the implementation of innovative sustainable business models is conditioned by the need for more entrepreneurial literacy and qualified personnel in nature-based tourism companies.

Nature-based tourism companies are poorly committed to sustainability, enforcing the role of innovative sustainable business models for nature-based tourism, which is vital to understanding nature-based tourism supply and responding to high-demand customers and markets.

The three studies contribute to the literature by characterising Portuguese nature-based tourism companies and evidencing their commitment to sustainable development. The research typifies nature-based tourism companies, enabling an understanding of how nature-based tourism companies align with innovation and sustainability. The thesis identifies nature-based tourism managers, public institutions, and NGO perceptions of sustainability and innovation on long-term business, resilience, and competitive advantage in nature-based tourism companies. Different perspectives from nature-based tourism entrepreneurs, public institutions, and NGO on the four drivers for innovative sustainable business models (sustainability, innovation, competitive advantage, and long-term business/resilience) were evidenced. Nature-based tourism entrepreneurs understand sustainability from an environmental perspective, considering innovation a relevant performance asset. Nature-based tourism entrepreneurs express their willingness to maintain a long-term business and consider nature-based tourism a

competitive tourism embedded in authentic experiences supported by high-quality services, such as the case of nature-based tourism experiences in Protected Areas.

Public institutions and NGO consider that nature-based tourism entrepreneurs should improve the introduction of sustainability dimensions in their business models. These organisations emphasise the lack of strategy from nature-based tourism entrepreneurs and limited entrepreneurs' qualifications, negatively impacting nature-based tourism sustainability.

Public institutions and NGO reported that nature-based tourism entrepreneurs need to gain digital skills, assuming nature-based tourism companies are behind time on innovation, introducing innovative solutions developed by others. Public institutions and NGO consider nature-based tourism entrepreneurs not engaged with long-term/resilient businesses, mentioning these entrepreneurs as opportunistic, leaving mostly on the fleeting and following the trend, offering an alternative and inconsistent business with a high mortality rate. Regarding the competitiveness driver, public institutions and NGO mentioned that Portugal cannot be considered a competitive nature-based tourism destination, as the country has evidence of small nature-based tourism companies, family-owned and managed by entrepreneurs with feeble qualifications.

To summarise, nature-based tourism companies lack innovation and sustainability in their business models, focusing on economic sustainability and ecological commitment, fulfilling the legal requirements. It requires nature-based tourism companies to expand to social sustainability and improve environmentally and economically. Therefore, introducing innovation and sustainability in nature-based tourism companies needs to be revised to improve competitiveness and long-term/resilient businesses, which was confirmed by the public institutions and the NGO.

The interviews revealed that nature-based tourism business models must accomplish the basic requirements of an innovative sustainable business model.

Regarding the first principle of Breuer et al. (2018) Sustainability orientation, the interviews reveal nature-based tourism companies primarily aligned with environmental sustainability, focused on economic growth, and only two of the interviewed companies clearly and unequivocally committed to providing social impact. Considering the second guiding principle, Extended value creation, the results point out that Portuguese NBT entrepreneurs align with ecological value creation and value for the company. Relating to the third guiding principle, Systems thinking, some interviewees value the relations between the company and the

surroundings, expressing the willingness to innovate the existing business model. Looking at the fourth guiding principle, Stakeholder integration, only one interviewee revealed a clear commitment to integrating specific stakeholders to support sustainability orientation, extended value creation, and systems thinking.

The previous analysis unveils that nature-based tourism entrepreneurs must guide their business models according to the principles proposed by Breuer et al. (2018) to achieve business model innovation for sustainability. The research showed the need for business management literacy by nature-based tourism entrepreneurs, supported by inadequately qualified labour and feeble adherence to new technologies. This observation prompts to consider the importance of training nature-based tourism entrepreneurs to fulfil basic knowledge needs and improve companies' sustainability. Additionally, the need for more research on sustainability in nature-based tourism and the inexistence of an appropriate, innovative sustainable business model for nature-based tourism may constrain nature-based tourism entrepreneurs from positioning themselves as sustainable, innovative, long-term/resilient, and competitive businesses.

An overall analysis of the three studies shows that the research meets the specific objectives and contributes to improving theoretical and practical knowledge in nature-based tourism. The following section discusses this research's leading theoretical and managerial implications on nature-based tourism, seeking to strengthen the dynamic relationship between theory and practice.

5.3. Research contributions

5.3.1. Theoretical and managerial contributions

The literature unveils that nature-based tourism companies commit poorly to sustainability (Reinhold et al., 2017), with few studies on nature-based tourism addressing sustainability (Reinhold et al., 2017) and integrating all sustainability dimensions (Biloslavo et al., 2018). It was also identified scarce and fragmented literature in tourism publications on business sustainability and business models (Reinhold et al., 2017), of an innovative sustainable business model for nature-based tourism (Geissdoerfer et al., 2018), and the lack of primary data on

business models for nature-based tourism (Reinhold et al., 2018). Literature also discloses nature-based tourism companies lacking appropriate training in tourism and innovation (Moscardo, 2008; Rønningen, 2010; Biloslavo et al., 2018).

Therefore, from a theoretical perspective, this thesis contributes to minimising the scarcity of literature on nature-based tourism through understanding the role of innovation and sustainability in the business models of nature-based tourism companies and their role in their competitiveness and long-term business/resilience. The research conducted in this thesis enabled the fulfilment of several gaps in the literature, namely obtaining primary data from nature-based tourism companies and understanding the formal and informal business models of nature-based tourism companies. There were consolidated four key drivers of an innovative sustainable business model for nature-based tourism: sustainability, innovation, competitive advantage, and long-term/resilience. The research allowed the understanding of how entrepreneurs set innovation and sustainability-oriented targets at their companies' core. Comparing the information collected from nature-based tourism entrepreneurs with the perceptions of public institutions and NGO yields a comprehensive understanding of the reality of nature-based tourism companies and the main constraints in implementing business model innovation for sustainability. Another theoretical contribution is discussing how innovative sustainable business models cope with sustainability, innovation, competitiveness, and long-term/resilience in nature-based tourism.

The thesis also contributes at the theoretical level by including working definitions of nature-based tourism and innovative sustainable business models and conveying an understanding of sustainability. Furthermore, it discusses NBT companies' constraints in adopting Breuer et al. (2018) guiding principles.

Moreover, this thesis contributes to the expanding current theoretical knowledge (Geissdoerfer et al., 2018) by proposing a framework for an innovative and sustainable business model for nature-based tourism, which considers the four drivers identified (innovation, sustainability, competitive advantage and long-term business/resilience) and the four principles proposed by Breuer et al. (2018) from a circular model perspective.

From a managerial point of view, the theoretical knowledge obtained from the three studies contributes to improving the interaction between academia, public institutions and governance, NGOs, and entrepreneurs.

The research proposes an innovative sustainable business model for nature-based tourism companies, which aims to support nature-based tourism entrepreneurs in modifying and adapting the existing business model. From a managerial perspective, the proposed business model contributes at two levels. First, it improves nature-based tourism companies' management, and second, it enhances their performance, competitiveness, and long-term business. Another managerial implication of the proposed business model is its contribution to nature-based tourism companies to fulfil the Sustainable Development Goals and the 2030 targets. The research identifies nature-based tourism entrepreneurs' main limitations regarding management training, adopting digital technologies, introducing innovative initiatives and their commitment to sustainability. This information is essential for public institutions and NGOs setting out new governance strategies and drawing up new policies, training initiatives, regional planning, and population settlements.

5.4. Limitations and Further Research Avenues

The thesis discloses the work realised in the three studies, encompassing the collection and selection of literature, interviews, analysis, and information processing. Therefore, some limitations and future areas for research were identified.

5.4.1. Theoretical limitations of the research

One of the limitations of this research is related to the information access and the participation of nature-based tourism entrepreneurs. This research did not reach entrepreneurs providing glamping, surfing, extreme activities, and wildlife tourism, such as hunting. Therefore, including other nature-based tourism companies would expand the target of the researched companies and enrichment of the research. The research followed a qualitative approach. Qualitative research promotes a holistic understanding of the participants, recognises the complexity of human experiences and individual perspectives, and goes beyond statistical generalisations; however, it reduces the possibility of study replications and the validation of results across different contexts or populations (Bryman, 2015).

5.4.2. Further research avenues

Despite the theoretical and methodological limitations identified in this research, the research summarised in these three complementary studies helped to identify new research areas.

Considering the identified opportunities, the results suggest the need to improve knowledge in two lines of research. One line is developing, monitoring, and testing innovative sustainable business models for nature-based tourism companies. The other is developing targeted research on nature-based tourists' profiles and the role of tourists in adopting innovative and sustainable initiatives by nature-based tourism companies.

Study I delivered a comprehensive literature review on innovation and sustainability in nature-based tourism business models and their repercussions on long-term business and competitiveness. Considering the data collected, literature on the subjects under analysis revealed to be scarce in nature-based tourism, prompting an opportunity for conservation-based tourism research, which could lead to new business model approaches prioritising the restoration and protection of natural ecosystems while providing unique and enriching experiences for visitors. Future research could focus on developing comprehensive methodologies to assess business models' environmental, social, and economic impacts of nature-based tourism, including the study of the effects on biodiversity, ecosystems, and local communities. Additionally, research might explore balancing tourism growth with preserving cultural identity and heritage.

The second study analyses the perceptions of nature-based tourism entrepreneurs, public institutions, and NGO on sustainability and innovation's relevance in nature-based tourism business models. This study identified nature-based tourism companies managed by small teams lacking appropriate business management skills and little commitment to sustainability. Future research could focus on designing and evaluating training programs for nature-based tourism entrepreneurs, tour operators, stakeholders, and local communities to improve sustainability awareness. Additionally, future research could focus on exploring business models of community-based tourism, capacity building, and equitable distribution of economic benefits. It might also include testing the proposed innovative sustainable business model in nature-based tourism companies. Testing the proposed innovative sustainable business model in tourism companies, other than nature-based tourism companies, would be relevant to

understanding how innovative sustainable business models contribute to sustainable development goals and sustainable tourism.

Study III aimed to understand what sustainable business model requirements nature-based tourism companies adopt in their business model following Breuer et al. (2018) guiding principles. The results show that nature-based tourism entrepreneurs are committed to system thinking with a biased perspective of the extended value creation, difficulties attracting the ideal stakeholders, and little orientation towards sustainability. Further research could focus on assessing and monitoring innovative sustainable business models in nature-based tourism companies through indicator implementation. Additional research would be needed to address how innovative sustainable business models could enhance sustainable value-creation engagement of nature-based tourism companies. Additionally, further research might include which factors influence tourist choices and preferences for sustainable options. Future research would be necessary to assess eco-certifications' effectiveness in consumer decisions.

Another area of research that cuts across studies II and III is improving nature-based tourism research on identifying best practices, such as habitat restoration, sustainable wildlife viewing, and the development of corridors to mitigate the impact on sensitive ecosystems. This approach could trigger exploring the integration of technologies like virtual reality, augmented reality, and geospatial mapping to enhance the tourism experience while minimising physical impact on natural sites. Therefore, it would be essential to understand how tourists could influence the implementation of innovative sustainable business models in nature-based tourism companies. Further research could focus on understanding how sustainability and innovation in nature-based tourism companies could condition tourists' choices.

To finalise this section, adopting quantitative methods in further nature-based tourism research would improve the findings' credibility, reliability, and applicability. Adopting quantitative methodologies would configure a relevant opportunity to validate and compare the results of this thesis. Through statistical analyses and systematic data collection, quantitative methods would provide valuable insights into nature-based tourism companies' sustainable development and management.

6. References

- Biloslavo, R., Bagnoli, C., & Edgar, D. (2018). An eco-critical perspective on business models: The value triangle as an approach to closing the sustainability gap. *Journal of Cleaner Production*, 174, 746–762. <https://doi.org/10.1016/j.jclepro.2017.10.281>
- Bocken, N. M.P., Schuit, C. S. C., & Kraaijenhagen, C. (2018). Experimenting with a circular business model: Lessons from eight cases. *Environmental Innovation and Societal Transitions*, 28(July 2017), 79–95. <https://doi.org/10.1016/j.eist.2018.02.001>
- Boons, F., & Lüdeke-Freund, F. (2013). Business models for sustainable innovation: State-of-the-art and steps towards a research agenda. *Journal of Cleaner Production*, 45, 9–19. <https://doi.org/10.1016/j.jclepro.2012.07.007>
- Breuer, H., Fitcher, K., Tiemann, I. (2018). Sustainability-oriented business model development: principles, criteria and tools. *Int. J. Entrepreneurial Venturing*, 10(2), 256–286.
- Bryman, A. (2015). The nature and process of social research. *Social Research Method*, 3–16.
- Fredman, P., & Tyrväinen, L. (2010). Frontiers in Nature-Based Tourism. *Scandinavian Journal of Hospitality & Tourism*, 10(3), 177–189. <https://doi.org/10.1080/15022250.2010.502365>
- Geissdoerfer, M., Vladimirova, D., Fossen, K. Van, & Evans, S. (2018). Product, service, and business model innovation: A discussion. *Procedia Manufacturing*, 21, 165–172.
- Moscardo, G. (2008). Sustainable Tourism Innovation: Challenging Basic Assumptions. *Tourism and Hospitality Research*, 8(1), 4–13. <https://doi.org/10.1057/thr.2008.7>
- Osterwalder, A., Pigneur, Y., & Clark, T. (2010). *Business model generation: A handbook for visionaries, game changers, and challengers*. Wiley.
- Rantala, T., Ukko, J., Saunila, M., & Havukainen, J. (2018). The effect of sustainability in the adoption of technological, service, and business model innovations. *Journal of Cleaner Production*, 172, 46–55. <https://doi.org/10.1016/j.jclepro.2017.10.009>
- Reinhold, S., Zach, F. J., & Krizaj, D. (2017). Business models in tourism: a review and research agenda. *Tourism Review*, 72(4), 462–482. <https://doi.org/10.1108/TR-05-2017-0094>
- Reinhold, S., Beritelli, P., & Grünig, R. (2018). A business model typology for destination management organisations. *Tourism Review*, TR-03-2017-0065. <https://doi.org/10.1108/TR-03-2017-0065>
- Rønningen, M. (2010). Innovative processes in a nature-based tourism case: The role of a tour-operator as the driver of innovation. *Scandinavian Journal of Hospitality and Tourism*, 10(3), 190–206. <https://doi.org/10.1080/15022250.2010.491255>

