



UiT The Arctic University of Norway

School of Business and Economics

Changing Business models for Sustainability

Role of drivers and dynamic capabilities in Arctic nature tourism

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Abstract

This thesis investigates nature tourism companies, which strive to incorporate sustainability into their business models and change them to be more resilient. For this purpose, it adopts a dynamic perspective on business models by which companies address corporate sustainability which is understood here as a balance among environmental, social, and economic pillars as well as a sustainable competitive advantage. Past studies overlooked the significance of a systematic analysis of drivers and enablers of change as a way to explain how business models are stimulated and changed. Thus, this thesis aims to answer this overall research question: *What are the key drivers and dynamic capabilities underlying business model change for sustainability, and how do they give rise to business model changes for sustainability?* Four sub-research questions are formulated across three studies: one systematic literature review and two empirical qualitative studies.

Article 1 was inspired by the existing literature regarding a prominent knowledge gap in terms of the theorization of business models in tourism research compared to management research. This study resides in a systematic literature review of nature tourism literature about the conceptualization and operationalization of business models with respect to sustainability and innovation. *Article 2* follows a qualitative multiple-case study design to comparatively examine five nature tourism companies to explore how their business models are driven to incorporate sustainability aspects. This study differentiates these business models in terms of sustainability integration and underlying drivers to shed light on crucial driving factors in terms of how they can drive various business models to embed sustainability. *Article 3* relies on a longitudinal qualitative design to study how nature tourism companies handled the COVID-19 crisis and enhanced their resilience by changing their business models through building dynamic capabilities. To address the temporal aspects of dynamic capabilities and business model changes, two rounds of interviews were held with seven tourism entrepreneurs. This article regards the crisis as a driver underlying the building of dynamic capabilities that set the stage for business model changes.

Given the conceptual contribution of individual articles, article 1 stresses that business models are relevant tools to set off the desired changes and innovations and contributes to sustainable business model research by offering insight into how past nature tourism studies applied the concept of business model with respect to sustainability and innovation. By identifying knowledge gaps in the literature on the nature tourism business models, this study yields two empirical qualitative articles, articles 2 and 3. Article 2 contributes to sustainable business

model literature by refining and extending past typologies of drivers for sustainability embeddedness by clarifying how drivers perform empirically across different business models, particularly in nature tourism. Compared to article 2, article 3 seeks to probe more closely into firms via their respective dynamic capabilities and underlying practices, which enable business model changes to be either radical (innovations) or incremental (adjustments). While article 2 considers sustainability in terms of social and environmental aspects in addition to the economic aspect, article 3 conceptualizes sustainability in light of resilience. Article 3 proposes a taxonomy of dynamic capability-based practices and contributes to the dynamic capabilities and business model innovation literature in times of crisis.

Above all, this thesis contributes to filling the noteworthy knowledge gap in terms of the lack of a systematic and thorough explanation of the relevant key drivers and dynamic capabilities to illustrate business model changes for sustainability. Notably, it makes novel theoretical contributions to the research stream of business model innovations for sustainability. Relatedly, this research clarifies how critical driving factors and dynamic capability-based practices stimulate and facilitate business model changes. This is done in this thesis by differentiating drivers and dynamic capabilities, but at the same time seeing them as closely linked.

Hence, by applying a dynamic perspective on business models, the overall findings demonstrate how business models are driven, enabled, and changed to embed sustainability and enhance resilience. This thesis argues that business model design is a continuous task and not a one-time practice. Moreover, the overall results of this thesis provide useful insights into business models in nature tourism in two different situations: a competitive environment before the crisis and a turbulent environment during the crisis. More importantly, as the findings of articles 2 and 3 suggest, the focus of change might vary to ensure a proper balance among economic, social, and environmental aspects. This thesis concludes with some research limitations, suggestions for future studies and implications for practice.

Keywords: Business model for sustainability, Business model innovation, Corporate sustainability, Drivers, Dynamic capabilities, Arctic nature tourism.

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List of appended articles and contributions

The following articles are included in this PhD thesis:

Article I: Sahebalzamani, S.; Bertella, G. (2018). Business Models and Sustainability in Nature Tourism: A Systematic Review of the Literature. *Sustainability* 2018, 10, 3226. DOI: 10.3390/su10093226

Article II: Sahebalzamani, S (2020). Driving Business Models toward Sustainability in Arctic Nature Tourism. *Journal of Contemporary Administration (RAC), SI, Business Models*, 25(3). DOI:10.1590/1982-7849rac2021190384.en.

Article III: Sahebalzamani, S.; Jørgensen, E. J. B.; Bertella, G.; Nilsen, E. R. (2022). A dynamic capabilities approach to business model innovation in times of crisis. *Tourism Planning & Development*. DOI: 10.1080/21568316.2022.2107560.

Contributions:

Table below shows an overview of the contributions of co-authors to the three appended articles. Moreover, signed co-author statements for articles 1 and 3 can be found in Appendix.

Developmental phases	Article I	Article II	Article III
Concept and idea	SS, GB	SS, GB	SS, GB
Study design and methods	SS, GB	SS	SS
Data collection	SS	SS	SS
Analysis and interpretation	SS	SS	SS
Manuscript preparation	SS, GB	SS	SS, EJ, GB, EN
Critical revision of the intellectual content	SS, GB	SS, GB, EJ, EN	SS, EJ, GB, EN

SS = Samira Sahebalzamani

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EJ = Eva Jenny B. Jørgensen

EN = Ety Ragnhild Nilsen

List of abbreviations

BM	Business Model
BMA	Business Model Adjustment
BMfS	Business Model for Sustainability
BMI	Business Model Innovation
DC	Dynamic Capability
GT	Grounded Theory
HR	Human Resource
NHO	Norwegian Hospitality Association
NSD	Norwegian Centre for Research Data
SBM	Sustainable Business Model
UNWTO	United Nations World Tourism Organization
UNEP	United Nations Environment Programme
WCED	World Commission on Environment and Development

PART I
OVERVIEW OF THE THESIS

1. Introduction

1.1. Setting the stage

Tourism, as a fast-growing sector, has received much attention during the last two decades from both academia and policy-makers, as it has been increasingly facilitated through the world becoming more accessible. However, tourism is highly debated in terms of global sustainability, as it can both contribute to sustainable development and present challenges (Truong and Hall, 2015). For instance, tourism is greatly dependent on natural resources and communities, and it can cause harm such as natural resource and food depletion, greenhouse gas emissions, excessive land usage, biodiversity loss, and sociocultural change in terms of a reduction in social well-being (Rutty et al., 2015). Tourism nonetheless has the potential to both conserve nature and contribute to the economic growth of destinations (Wall and Mathieson, 2006; Butler, 2015; Fredman and Margaryan, 2021; Saarinen, 2021; Mtapuri et al., 2022) and embraces interactions among tourists, destinations, industry, communities, and nature (Truong and Hall, 2015; Pocinho et al., 2022).

Sustainability was introduced to tourism research in the 1980s as a niche area (Northcote, 2015) bringing economic, environmental, and social dimensions together to create awareness regarding responsible behavior (Budeanu et al., 2016). As one of the most cited definitions of sustainable tourism, Butler (1993) argues that sustainable tourism should be “developed ... at such a scale that it remains viable over an infinite period and does not degrade or alter the environment (human and physical) ... to such a degree that it prohibits the successful development and well-being of other activities and processes” (p.29). In addition to the focus on a long-term perspective and tourism viability, Butler conceptualizes sustainable tourism in terms of a balance between maintaining social well-being, environmental integrity, and economic benefits. Sustainability has become a prevailing approach in tourism studies and has been broadly addressed at the global and local destination levels (Nepal et al., 2015; Lacey et al., 2018). Nonetheless, more emphasis must be placed on scaling down the phenomenon of sustainable tourism to the community level (i.e., community-based tourism) through the practices of tourism operators (Nepal et al., 2015; Mtapuri et al., 2022). However, the translation of sustainability into business practices persists as a prominent issue for many tourism companies (Lacey et al., 2018). This challenge could arise from the complexity of sustainability and thus a lack of consensus among scholars and practitioners about what sustainability comprises and how the relationships and trade-offs of sustainability principles can be balanced (Coffman and Umemoto, 2010; Ortiz-de-Mandojana and Bansal, 2016).

Additionally, to ensure sustainable tourism, the approach to target and rely on eco-friendly tourists is deemed to be insufficient, as even very responsible tourists are generally less concerned about their consumption during vacation than they are in their daily lives (McKercher, 1993; Dolnicar, 2015). Butler (2015) claims that sustainable tourism development may never be completely reached; instead, the transition toward stronger sustainability should be favored. What may be influential is the active engagement of tourism businesses as the main sources of sustainability-related solutions (Zollo et al., 2013; Baumgartner and Rauter, 2017) by practicing sustainability within business models (BMs) as a relevant and flexible tool, through which a company communicates how it conducts its business to create value for customers and other stakeholders (Teece, 2010). The integration of sustainability into a BM results in a sustainable business model (SBM) or a business model for sustainability (BMfS) and is regarded by Bocken et al. (2014) as innovation within a BM. A BMfS seeks an alternative paradigm to *change* the traditional way of doing business by holding a long-term perspective, incorporating multistakeholder management and creating both monetary and nonmonetary value for various stakeholders (Boons and Lüdeke-Freund, 2013; Geissdoerfer et al., 2018). Sommer (2012) highlights the untapped economic opportunities that stem from the firm-level inclusion of sustainability known as corporate sustainability (Schaltegger and Wagner, 2006), which can be initiated primarily by BMs (Schaltegger et al., 2016). In management research, sustainability-related practices are closely linked to competitive advantage through the improvement of long-term economic performance (Zollo et al., 2013; Ortiz-de-Mandojana and Bansal, 2016). However, sustainability can be interpreted by companies based on their preferences; thus, progress toward incorporating sustainability into BMs has remained incremental rather than radical (Sommer, 2012).

Furthermore, Foss and Saebi (2015) relate the rising research interest in BM-related topics to its comprehensive approach. For example, with respect to innovation, BMs can potentially play two distinct roles (Wirtz, 2011) in terms of either supporting the commercialization of new products and services (Teece, 2010) or being targeted for innovation themselves through the process of innovating BMs (Demil and Lecocq, 2010; Zott and Amit, 2010). As such, the concept of BM is viewed from either a static perspective in which it is articulated through its main components or a more dynamic view in which it is referred to as a tool to address sustainability, innovations, and changes (Demil and Lecocq, 2010; Lambert and Davidson, 2013; Bocken et al., 2014). Relatedly, a transformational view that Demil and Lecocq note as “where the BM is considered as a concept or a tool to address change and focus on innovation” (p.228) highlights the necessity of including business model innovations (BMIs) for business

development. Foss and Saebi, (2017) define BMIs as “designed, nontrivial changes to the key elements of a firm’s BM and/or the architecture linking these elements” (p.207). Recently, researchers have attempted to replace the static approach with a dynamic approach (e.g., Saebi, 2015; Rauter et al., 2017; Zhang et al., 2021). However, most studies still apply a static approach in which BMs are interpreted as a snapshot at a certain point in time (Pieroni et al., 2019). To function successfully, BMs need to be scrutinized as dynamic constructs since the business environment tends to be constantly evolving. Relatedly, through dynamic capabilities (DCs), firms build their preparedness to systematically change their BMs (Saebi, 2015) because DCs enable firms to “create, deploy, and protect the intangible assets that support superior long-run business performance” (Teece, 2007; p. 1319). DCs signal a firm’s flexibility in carrying out new practices to respond to unexpected contingencies that necessitate establishing a new BM (Leih, et al., 2015). Relying on the dynamic approach, this thesis understands BMs as a tool to address changes for sustainability and DCs as enablers of BM changes.

1.2. Empirical focus

In general, nature plays a major role in and is a key starting point for the development of many Norwegian tourism products (Ministry of Trade and Fisheries, 2017), especially in the Arctic, which draws tourists due to its spectacular nature, extreme climate, pristine landscapes, wildlife, northern lights, and fjords (Chen et al., 2016; Saarinen and Varnajot, 2019). Based on Hall and Boyd (2005), nature tourism embraces “tourism ... that focuses on specific elements of the natural environment ..., and tourism that is developed in order to conserve or protect natural areas” (p.3). Nature-based tourism is also farmed as “nature tourism, wilderness tourism, adventure tourism, environmental tourism, wildlife tourism, geo-tourism, outdoor tourism and ecotourism” (Fredman and Margaryan, 2021; p.15). Furthermore, nature tourism is tied to the excessive use of natural resources and disturbance of wildlife; nonetheless, the well-being of many rural communities depends on this industry (Kuenzi and McNeely, 2008; Pilcher et al., 2009; Saarinen, 2019; 2021; Fredman and Margaryan, 2021). This includes also communities in the Arctic, where the recent rapid increase in tourist demand makes it an urgent matter to put sustainable practices in place (Chen and Chen, 2016). Despite the strong dependence on nature and wildlife, nature tourism companies often use various approaches to address sustainability. Some apply nature instrumentally, while others stress the intrinsic value of the natural environment (Hoarau-Heemstra and Eide, 2016).

In tourism research, Arctic tourism products and activities are characterized by nature-based experiences; they are built on the local environment and resources (Viken, 2013; Saarinen and

Varnajot, 2019) and are dominated by small businesses (Sørensen and Grindsted, 2021). Lee et al. (2017) define Arctic tourism as “any tourism-relevant activities that are associated with businesses, communities, organizations or other stakeholders in the Arctic region, defined to include the areas and regions as per the consideration of relevant phytogeographic, climatic, geomorphological, latitudinal and geopolitical criteria” (p.2). Arctic tourism relies on the “preservation of pure and clean environments, viewed as important in forging a valuable environmental stewardship while promoting economic growth” (Chen, 2015; p.227). By creating job opportunities, Arctic tourism is one of the main contributors to the economic prosperity of various destinations (Chen and Wang, 2015) as the demand for Norwegian nature-based activities increased considerably. Thus, the government began to place more emphasis on the prosperity of the tourism sector (Seeler et al., 2021). The latest statistics in 2019 before the pandemic indicate that the Norwegian tourism industry contributed 8% of the country’s GDP and created more than 310,000 jobs (World Travel & Tourism Council, 2020). Still, the great dependence of Arctic destinations on the revenue from international tourism has made Arctic tourism a sort of “mono-industry” (Seeler et al., 2021).

This thesis’s empirical focus is on small tourism companies offering nature-based activities in Arctic Norway. This context provides relevant and interesting cases (companies) for studying BMs that are aimed at sustainability integration because these businesses rely heavily on the rich nature, local culture, and communities for their operations (Saarinen and Varnajot, 2019). Therefore, they need seriously consider sustainability principles to ensure a long-term sustainable competitive advantage (Lundberg et al., 2014; Sørensen and Grindsted, 2021).

1.3. Problem statement and the overarching research question

Focused on the Triple Bottom Line of profit, planet, and people (Elkington, 1997), sustainability is identified as a fragmented concept and challenging to undertake (Dyllick and Muff, 2016; Rauter et al., 2017; Aagaard, 2019). Although innovations are broadly deemed an effective solution to sustainability problems, the academic literature remains significantly uncertain in terms of how innovations can contribute to a more sustainable approach, as well as business success in both monetary and nonmonetary terms (Schaltegger and Wagner, 2011; Hall and Wagner, 2012; Ritala, 2019; Lüdeke-Freund, 2020). Additionally, the concept of BM has been closely associated with innovations in terms of the creation of competitive advantage and organizational change (Boons and Lüdeke-Freund, 2013) and transition toward sustainability (Bocken et al., 2014; Roome and Louche, 2015; Lüdeke-Freund and Dembek, 2017). However, research on how companies can apply BMs to embed sustainability and

operationalize sustainability innovations to create sustainable (environmental, social, and economic) value has not been thoroughly investigated (Boons et al., 2013; Bocken et al., 2014; Schaltegger et al., 2016; Lüdeke-Freund and Dembek, 2017; Bocken and Geradts, 2020; Lüdeke-Freund, 2020). Moreover, designing BMIs for sustainability is a complex task and has a high risk of failure (Baldassarre et al., 2020; He and Ortiz, 2021). Still, BMI literature suffers from a lack of theorizing and empirical evidence, and there is an insufficient understanding of the mechanisms through which BMIs are created (Foss and Saebi, 2015, 2017; Snihur and Zott, 2020; Zhang et al., 2021). Scholars associate BMIs with internal and external drivers (Zollo et al., 2013; Bossle et al., 2016; Foss and Saebi, 2017; Rauter et al., 2017) and the strength of a firm's DCs (Leih et al., 2015; Kurtz and Varvakis, 2016; Duchek, 2020). The degree to which a firm is capable of changing its BM can be explained by the extent to which the firm's DCs are developed (Zollo et al., 2013; Teece, 2018). However, a thorough explanation of the relevant antecedents and drivers of BM change to clarify how BM changes take place is missing (Saebi, 2015; Foss and Saebi, 2017; Snihur and Zott, 2020; Zhang et al., 2021).

Furthermore, the research on tourism BMs (Reinhold et al., 2018; Breier et al., 2021) is in its infancy, and the concept of BM has been addressed by a small set of studies in relation to sustainability (Budeanu et al., 2016; Coles et al., 2017; Reinhold et al., 2017; Breier et al., 2021). Due to the scattered tourism BM research, an investigation of the antecedents and possible configurations of new tourism BMs is needed (Reinhold et al., 2017). Cheah et al. (2018) illustrate that through BMIs, tourism companies can build a sustainable competitive advantage, especially under turbulent situations, by seizing new opportunities and finding new ways to change value creation. Despite the empirical relevance of the research related to BMIs in the tourism industry, such research is scant (Breier et al., 2021). Furthermore, prior studies (e.g., Margaryan and Stensland, 2017; Fredman and Margaryan, 2021) underscore the lack of empirical data and theoretical contributions on the sustainability performance of Nordic nature tourism. The existing Nordic nature tourism literature mostly addresses the sustainability of nature tourism with respect to the issue of climate change or in protected areas (Fredman and Margaryan, 2021; Sørensen and Grindsted, 2021). To speed up the progress toward sustainable tourism, researchers should engage more actively with their empirical settings and seek insights from the reality of the tourism industry (Lane, 2009). To do so, this thesis treats sustainability as a journey rather than an end goal (Farrell and Twinning-Ward, 2004; Butler, 2015; Font et al., 2016) and, in concert with the focus of BMfS, views nature tourism as a means to create value in both monetary and nonmonetary terms. To address knowledge gaps, the overarching research question is formulated as follows:

What are the key drivers and DCs underlying BM change for sustainability, and how do they give rise to BM changes for sustainability?

1.4. Appended articles, sub-research questions and thesis structure

To answer the overarching research question of this thesis, four sub-research questions are posed across three individual articles: one systematic literature review and two empirical qualitative studies. Table 1 demonstrates an overview of these articles, together with sub-research questions and their relation to the overarching research question.

Table 1: Overview of sub-research questions in relation to the overarching research question

Article	Sub-research questions	Relation to the overarching research question	Type of study
1	SRQ1: How is the BM concept used and operationalized within scientific articles about nature tourism? SRQ2: To what extent and how do these articles include and discuss sustainability-related aspects?	Provides useful insights that underpin articles 2 and 3 by examining and summarizing the findings of prior nature tourism literature on BMs with respect to sustainability, innovation, and BM conceptualization and operationalization.	Systematic literature review
2	SRQ3: How are BMs driven toward sustainability in Arctic nature tourism?	Investigates the BMs that are moving toward sustainability by going deep into the underlying internal and external drivers to reveal how each stimulates various BMs toward sustainability.	Qualitative study
3	SRQ4: How do entrepreneurs change the BMs via DCs to tackle the crisis?	Explores the BMs in face of the COVID-19 crisis to study how entrepreneurs build and apply the firm's DCs to change BMs to meet the crisis and build resilience.	Longitudinal qualitative study

Inspired by a recent literature review on BMs in tourism by Reinhold et al. (2017), article 1 aims to contribute to the SBM literature in the context of nature tourism. The goal of this study is to extend the prior knowledge on this subject by providing a more sufficient understanding of sustainability principles included within nature tourism BMs. Reinhold et al.'s study basically focused on tourism and hospitality and not nature tourism in particular, therefore, sustainability aspects have been very limitedly explored. To provide insights into the ways that nature tourism BMs are used to embed economic, environmental, and social sustainability, this article draws on a systematic literature review about the conceptualization and operationalization of nature tourism BMs. More importantly, the aim is to identify the knowledge gaps as a basis for two empirical studies, 2 and 3. Resulting from article 1, Figure 1 summarizes knowledge gaps to show how articles 2 and 3 are geared toward addressing those gaps in addition to other gaps that were recognized later on in the project. Based on the findings of the systematic literature review, the knowledge gaps are mainly referred to as follows:

1. Sparse knowledge of SBMs in nature tourism;
2. A lack of a systematic analysis of the antecedents of BM change;

3. A lack of a clear conceptualization of BMs in nature tourism;
4. Insufficient knowledge of the BM concept from a dynamic perspective; and
5. Limited knowledge of BMI.

By addressing the first four gaps, article 2 strives to determine how BMs are driven toward incorporating sustainability principles, while article 3 aims to address the gap in terms of limited knowledge on BMI and to elaborate how BMs are changed to tackle the COVID-19 crisis and build resilience. More specifically, article 2 relies on a qualitative multiple-case study research design to explore the BMs of five small companies that are moving toward sustainability to run a comparative analysis of the integrated sustainability aspects and of internal and external drivers. This study follows a dynamic perspective on BMs to identify critical drivers and how each stimulates various BMs for sustainability, as Zollo et al. (2013) argue that there are always specific reasons for altering BMs to incorporate sustainability. Therefore, gaining insight into such reasons can be valuable for companies intending to embed sustainability (Sommer, 2012). Despite their importance, drivers have been addressed by a few studies (Zollo et al., 2013; Saebi, 2015; Bossle et al., 2016; Stampfl, 2016; Foss and Saebi, 2017; Rauter et al., 2017) that are mostly conceptual or review studies rather than empirical ones. This research seeks to bridge such gaps in the nature tourism literature and contributes to building new knowledge on SBMs by extending the prior classification of drivers from internal and external drivers to indicate how each driver can set the stage for developing a BMfS.

The study described in article 3 has a longitudinal qualitative design and elaborates on how DCs give rise to BM changes by exploring the perception of seven tourism entrepreneurs about how the crisis can be met and how BMs can be changed to build resilience. This study considers the crisis an external driver (Luthe and Wyss, 2015; Jiang et al., 2021c) that embarks on building DCs and changing BMs. Whereas article 2 concentrates on recognizing internal and external drivers, article 3 aims to take this one step further and look more closely into firms internally through their DCs and underlying practices, which can inform business model adjustments (BMAs) and BMIs. Notably, gaining insight into the firm's DCs is critical because DCs contribute to the resilience of a firm by enhancing its ability to survive in the long run rather than providing just a temporary fix (Leih et al., 2015). Although DCs theory provides a relevant lens in crisis management (Battisti and Deakins, 2017), this research stream is still scant in the tourism crisis context in terms of the new DCs required for adaptation (Jiang et al., 2019, 2021a, 2021b). This research contributes to the literature combining DCs and BMI in tourism crisis management and suggests a taxonomy of 12 DC-based entrepreneurial practices to explain BMI and BMAs based on DCs as adaptive, innovative, or adaptive-innovative.

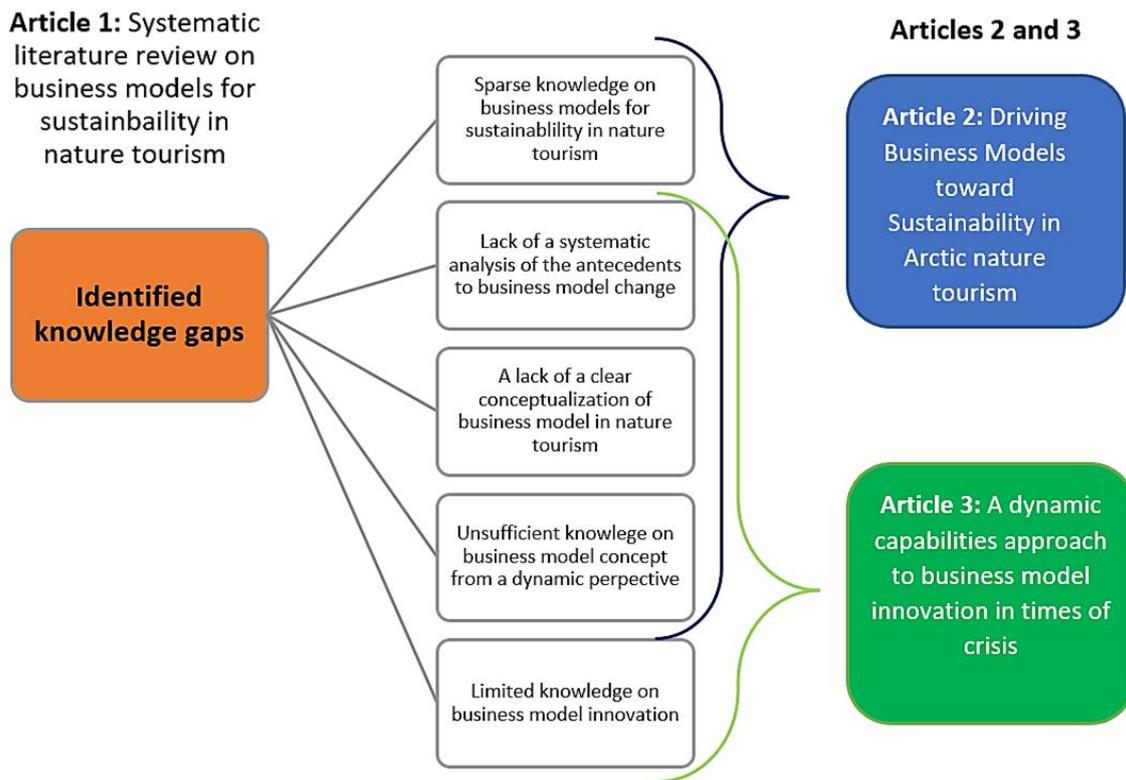


Figure 1: Positioning of articles 2 and 3 based on the knowledge gaps identified by article 1

Hence, the three articles are combined to answer the overall research question by addressing various research objectives. Article 1 helps to answer the research question by systematically investigating the prior literature, highlighting the knowledge gaps, and suggesting a dynamic perspective on BMs to explain changes for sustainability. Accordingly, article 2 contributes by unpacking internal and external drivers as antecedents to BMfS in terms of social and environmental value creation. Compared to article 2, article 3 takes one step further and clarifies how BM changes take place by applying DCs theory in crisis context. Due to the relevance of the resilience concept in crisis, study 3 regards sustainability in light of resilience and crisis as a driver, which encourages the development of DCs that lead to BM changes.

This thesis is organized into two parts. **Part I** presents an overview of this PhD project and consists of five chapters. Chapter 1 provides an introduction in terms of topic relevance, problem statement, the research question and sub-research questions, the empirical focus and appended articles. Chapters 2 and 3 discuss the theoretical background and methodological approach of this thesis, respectively. Chapter 4 provides a summary of three articles. Chapter 5 elaborates on the main findings, answers the research question, and discusses theoretical contributions, research limitations, suggestions for future research, and implications for practice. Finally, **part II** provides the three full-length appended articles.

2. Theoretical background

This chapter discusses the theoretical background of this thesis. Across the three articles, various concepts and theories are applied to serve the research objectives and answer the sub-research questions. To explain the relevance of this thesis, following this chapter, the literature is synthesized to present the current state of knowledge in the field. This thesis mainly draws on two research fields: *sustainability innovation* (Gössling et al., 2009; Boons and Lüdeke-Freund, 2013; Boons et al., 2013; Jay and Gerard, 2015; Adams et al., 2016; Albareda and Hajikhani, 2019; Bocken et al., 2019; Boons and McMeekin, 2019; Ritala 2019; Lüdeke-Freund, 2020), and **BM** (Osterwalder and Pigneur, 2010; Teece 2010). Thus, it contributes mainly to the research on BMI for sustainability (Bocken et al., 2014; Geissdoerfer et al., 2016, 2018; Upward and Jones, 2016; Rauter et al., 2017; Breuer et al., 2018; Lüdeke-Freund et al., 2018) by applying BMs as a flexible dynamic tool to address various changes. Figure 2 shows the theoretical positioning of the thesis, which is shaded in blue at the *intersection* of the two research fields of *sustainability innovation* and **BM**. As outlined in Figure 2, sustainability innovation research lies at the intersection of two streams, *corporate sustainability* (green oval) (Schaltegger and Wagner, 2006; Schaltegger et al., 2012; Dyllick and Muff, 2016) and *innovation* (gray oval) (Dosi, 1998; Carayannis et al., 2003; O’Sullivan and Dooley, 2009; Hjalager, 2010). Moreover, this thesis draws upon the research on BMI, which is positioned at the intersection of two fields, innovation and BMs, and strives to address the BM concept from a dynamic perspective. Given that the concept of BM plays a key role in the articles and this thesis, this chapter starts with a discussion of this concept and then describes corporate sustainability and sustainability innovation, which are central in the positioning of this thesis.

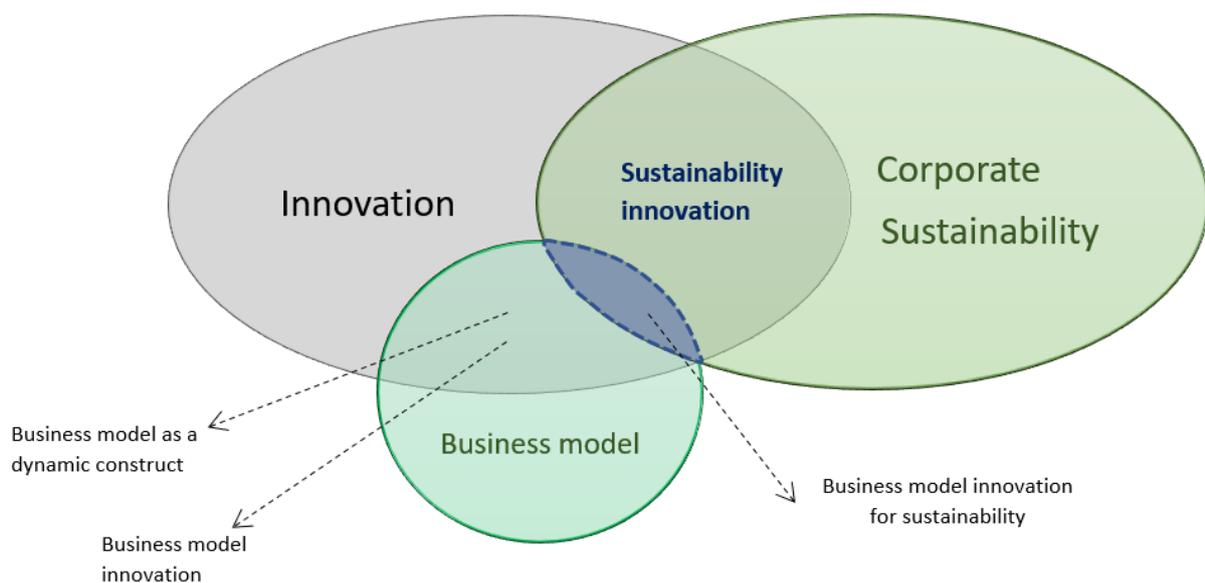


Figure 2: Positioning of this thesis with regard to mainstream theories

2.1. The business model concept

2.1.1. Origin of traditional business models

The term BM has a long history in management science. It was in the late 1950s when this term was applied for the first time by Bellman et al. (1957) (Osterwalder et al., 2005). Despite the usage of the term BM in later publications (e.g., Jones, 1960; McGuire, 1965), a common definition of BM was lacking (Wirtz et al., 2016). The first use of BMs in the academic literature was in information technology; since 2002, the focus has shifted to organizational studies and strategic management (Wirtz et al., 2016). With the rise of the internet and e-commerce in the late 1990s, BMs gained increasing attention from both companies and scholars, as BMs were viewed as key success factors of firm performance (Wirtz et al., 2016). The concept of BM has been developed over three stages (Wirtz, 2020). It was first conceptualized in information technology and computer science and was intermittently adopted for 20 years starting with Konczal (1975) and Dottore (1977), who are referred to as pioneers in forming the concept.

The second stage of the development of the concept of BM began in 1997 with the studies by Shaw et al., which concentrated on e-commerce, and by Treacy and Wiersema, who were the first to adopt the concept in relation to organizational theories (Wirtz et al., 2016). By 2002, an increased interest into this topic emerged across the disciplines of technology, organizational theories, and strategic management (Timmers, 1998; Linder and Cantrell 2000; Hamel, 2000; Chesbrough and Rosenbloom, 2002; Magretta, 2002). Due to the increase in BM-related publications, the third stage, starting in year 2003 began with the differentiation and classification of various BM definitions to construct a general approach in the academic literature (Wirtz, 2020); for example, studies by Afuah and Tucci (2003), Chesbrough (2006), Zott and Amit (2007), Casadesus-Masanell and Ricart (2010), and Demil and Lecocq (2010) were part of this stage.

2.1.2. Business model approaches and frameworks

Three approaches can be identified in the BM literature (Wirtz et al., 2016; Wirtz, 2020): the technology-oriented approach is primarily focused on e-commerce companies and the modeling of information systems (Eriksson and Penker 2000; Afuah and Tucci, 2003); drawing on organizational theories, the organization-oriented approach views BMs as a tool to explore organizational structures (Zott and Amit, 2007); and the most recent approach is strategy-oriented and tends to incorporate innovations and competition to connect strategy and BMs (Hamel, 2000; Johnson et al., 2008; Teece, 2010). Given the relevance of the last approach in explaining innovations and changes in BMs, this thesis adopts one of the most cited BM

definitions by Teece (2010): a BM “*articulates the logic and provides data and other evidence that demonstrates how a business creates and delivers value to customers. It also outlines the architecture of revenues, costs, and profits associated with the business enterprise delivering the value*” (p.173). The crucial role of BMs in bridging formulation and in implementing strategies is emphasized since a BM can clarify how activities should be implemented collectively to operationalize the strategies (Richardson, 2008).

The treatment of BMs as frameworks can be found in the BM literature, and each framework presents a set of components that are considered particularly relevant (Johnson et al., 2008; Demil and Lecocq, 2010; Osterwalder and Pigneur, 2010; Teece, 2010; Boons and Lüdeke-Freund, 2013; Afuah, 2014; Wirtz et al., 2016). Table 2 indicates several studies in terms of BM components. All frameworks highlight the component of *value*, one of the most discussed concepts in management science (Bowman and Ambrosini, 2000; Lepak et al., 2007; Koistinen et al., 2018; Aagaard, 2019) and central within BMs (Teece, 2010). In the earlier classical perspective, value is divided into use value and exchange value; use value is defined based on the perceived quality of service or product by the users, whereas exchange value refers to monetary aspects in exchange for value in use (Bowman and Ambrosini, 2000; Koistinen et al., 2018). Thus, value refers to the customer’s benefit versus sacrifices (Woodall, 2003) and “is created whenever benefits exceed costs” (Figge and Hahn, 2004; p. 173).

Table 2: BM components identified across the literature

Study by	BM components
Johnson et al. (2008)	Value proposition, profit formula, key resources, key processes
Demil and Lecocq (2010)	Value proposition, organizational structure, resources and competences
Osterwalder and Pigneur (2010)	Value proposition, key activities, key resources, customer relationship, channels, key partners, customer segments, cost structure and revenue streams
Teece (2010)	Value proposition, value creation and value capture
Boons and Lüdeke-Freund (2013)	Value proposition, supply chain, customer interface, and financial model
Afuah (2014)	Value proposition, revenue model, growth model, capabilities, and market segments
Wirtz et al. (2016)	Value proposition, strategy, resources, network, customers, revenues, service provision, procurement, and finances

Given the relevance of the two BM approaches by Osterwalder and Pigneur (2010) and Teece (2010) in the appended articles and based on the BM definition by Teece (2010), these two approaches are briefly interpreted in parallel. This thesis conceptualizes BMs through three main components: value proposition, value creation and delivery, and value capture (Teece 2010). *Value proposition* refers to a combination of products and services that creates value for customers; *value creation and delivery* describe the capability of a company to generate value

and consists of key activities, resources, partners, customer relationships, segments, channels; and *value capture* explains costs and revenues based on how a company earns revenue by offering value to its customers (Osterwalder and Pigneur 2010). Value creation is configured through collaboration among a company, its customers and other stakeholders in the company's network to exchange key resources (Tynan and McKechnie, 2009). Likewise, Lepak et al. (2007) regard value in a more comprehensive way and assert that "various stakeholders have different views as to what is valuable because of unique knowledge, goals, and context conditions that affect how the novelty and appropriateness of the new value will be evaluated" (p. 185). Given the recent developments in the BM research and broader management research, value creation has become more comprehensively highlighted by shifting from traditional BMs toward SBMs following a network-centric approach, the inclusion of diverse stakeholders, and the creation of nonmonetary value in addition to monetary value (Bocken et al., 2014; Schaltegger et al., 2016; Breuer et al., 2018). To discuss the SBM research, the literature on corporate sustainability and sustainability innovation will be elaborated following this section.

2.2. Corporate sustainability

The term "sustainable" appeared for the first time in 1972 in the book "The Limits of Growth" by Meadows et al. (Grober, 2015). Raising a call to rethink the current way of development, Meadows et al. (1972) searched for a model to ensure "a world system that is 1. *sustainable* without sudden and uncontrollable collapse; and 2. capable of satisfying the basic material requirements of all of its people" (p.158). To discuss corporate sustainability, sustainable development should first be defined. In the scientific literature, two terms, sustainability and sustainable development, are applied interchangeably (Williams and Millington, 2004). One of the most cited definitions of sustainable development among scholars is that developed by the World Commission on Environment and Development (WCED), which described this concept in the Brundtland report as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987; p.43).

The concept of sustainable development as introduced by WCED has received critiques (e.g., McNeill, 2000; Robinson 2004; Adams, 2009). For instance, Adams (2009) criticizes this concept and states "[t]ruly, the path to sustainable development is paved with good intentions, but the rhetorical vagueness of that master-phrase 'sustainable development' has made it too easy for hard questions to be ignored, stifled in a quilt of smoothly crafted and well-meaning platitude" (p.xvi). This concept combines two "contradictory" discourses (Adams, 2009), the development discourse, which necessitates industrialization and growth, and the sustainability

discourse that is primarily concerned with the ecological and social consequences of industrialization. This thesis acknowledges that this dispute is valid and worth exploring in greater depth. However, doing so is beyond the scope of this thesis because this concept informs a macro-level perspective, while here the focus is on sustainability at the company level. Moreover, the WCED definition of this concept is too vague and general to be put into practice by practitioners (Saarinen, 2014; Rauter et al., 2017). Later, various approaches have been introduced to address sustainability, such as Elkington's (1994) Triple Bottom Line, in which sustainability is conceptualized through the inclusion of financial, social, and environmental bottom lines. Nonetheless, sustainable development cannot be achieved without ensuring company-level sustainability, known as corporate sustainability, because companies can significantly influence society and the economy (Schaltegger et al., 2012). To address sustainability at the company level, this thesis adopts the Triple Bottom Line approach.

Corporate sustainability is defined by Winnard et al. (2014) as “[a] firm pursuing sustainability will seek to eliminate the negative impacts and improve the positive impacts from its activities, to restore natural capital whilst enhancing human and maintaining ethical capitals ... by eliminating resource extraction and pollution, identifying unsustainability risks and opportunities, prioritizing them on their net contribution to the capitals and mitigating such risks or exploiting opportunities, whilst maintaining economic capital so as to operate long term” (p. 307). Sustainability is deemed “an unending process of moving toward positive outcomes” (Galvani et al., 2020; p. 8). By translating sustainability into business practices, corporate sustainability management, as defined by Schaltegger and Wagner (2006) “deals with both the analysis and management of the effects of environmental and social activities on the competitiveness and economic success of a company, as well as with the analysis and management of the social and environmental effects of business activities” (p.4). In contrast to the traditional perspective focusing on shareholder value and profit maximization as the main objective (Friedman, 1970), this alternative perspective changes the focus from purely financial value to social and environmental considerations (Lankoski and Smith, 2017). Furthermore, corporate sustainability is argued to be one of the critical elements of sustainable tourism (Mtapuri et al., 2022), which is expanded upon in Section 2.2.1.

Social sustainability can be achieved by obtaining a better understanding of the community's expectations and interests and engaging accordingly with the relevant stakeholders (Dyllick and Muff, 2016), whereas environmental sustainability is understood as the efficient usage of natural resources and the minimization of negative effects (Brehmer et al., 2018). To

operationalize corporate sustainability, business cases for sustainability are required to be created (Schaltegger et al., 2012) to consider both economic and socioenvironmental sustainability (Parnell, 2008). A business case for sustainability seeks ways to make money from voluntary environmental or social activities and should fulfill three criteria, as Schaltegger et al. (2012) explain: they should 1) be based on voluntary activities, and 2) contribute to economic value creation for the company by creating social or environmental value while 3) solving a sustainability issue. Additionally, a business case for corporate sustainability is assessed according to its benefits, such as cost savings, increased competitive advantage, enhanced corporate image and stock value (Lovins, 2010).

2.2.1. Sustainable tourism

In the past, the tourism phenomenon has been perceived as a primary reason for the establishment of national parks, and it has turned out to be a means of setting the value of particular areas and lands that are no longer capable of yielding financial outcomes (Frost and Hall, 2009). Tourism research has been deeply influenced by the introduction of sustainable development by the WCED; however, the inclusion of tourism in the Brundtland report was notably minimal (Gössling et al., 2009; Butler, 2018). As a paradigm, sustainability in tourism has emerged in policy guidelines related to tourism development and planning, as well as in academia to determine the responsibilities of tourism and its growth limits (Saarinen, 2014). In 2005, sustainable tourism was defined by the United Nations World Tourism Organization (UNWTO) and The United Nations Environment Programme (UNEP) as “tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities” (p. 12).

The first discussions on sustainable tourism took place in the early 1990s, when traditional tourism BMs seemed to function successfully, and the industry was quite satisfied and therefore, started to react skeptically, and reject this concept (Lane, 2009). During those early days, some scholars claimed that this new concept constituted a wishful thinking, and was thus, impossible to realize (Butler, 1990; Wheeler, 1993). Indeed, sustainable tourism was brought into existence to solve the paradox between tourism development (growth and economic interests) and sustainability (conservation and ecological interests) and to hinder the negative impacts of tourism (Hall, 2010). The main challenge in terms of the development of sustainable tourism was that the necessity of sustainable tourism was not entirely understood by societies because such an approach demanded behavioral shifts at several levels and by various stakeholders. Thus, it was perceived as challenging and painful by many (Lane, 2009). The

progress toward sustainability management in tourism has been argued to be relatively slow, as both the tourism industry and tourists are in denial regarding the negative impacts of tourism on nature and society. In particular, tourists mostly feel relaxed and less mindful about their consumption while traveling (Gössling et al., 2009).

Given the shortcomings of the definition provided by the UNWTO and the UNEP, Butler (2018) refers to a lack of clear and precise definitions of keywords, as well as the failure to address divergent perspectives of main goals and outcome measurements as well as to set limits on growth. Moreover, Saarinen (2014) emphasizes the need to determine limits to growth, the issue of tourism responsibility, and the reasons for the failure of sustainable tourism in research and practice. Based on the latest statistics before the COVID-19 pandemic, the tourism industry experienced strong growth in 2019 for the 10th consecutive year (UNWTO, 2020). The tourism industry “is addicted to growth, which is incompatible with sustainability goals” (Higgins-Desbiolles, 2018, p.157). Despite critiques of the operationalization of sustainable tourism (e.g., Scheyvens, 2009; Hollenhorst et al., 2014; Utting, 2015), a growing body of research emphasizes the critical role of sustainability in the development and planning of tourism as being urgent (e.g., Saarinen et al., 2017; Saarinen and Gill, 2019). Nonetheless, tourism is viewed in terms of its positive effects on all three principles of sustainability (Butler 2018).

Given sustainable tourism, several approaches can be found in the literature. For example, Hall (2010) suggests the idea of “steady-state” tourism, which relies on sufficiency and the efficient use of natural resources and focuses on replacing growth with development (parallel to quality improvement without an increase in usage). Another approach is tourism degrowth, which addresses the issue of areas with over-tourism (Fletcher et al., 2019; Sørensen and Grindsted, 2021). Degrowth pinpoints “a trajectory where the ‘throughput’ (energy, materials, and waste flows) of an economy decreases while welfare, or well-being, improves” (Kallis, 2018, p. 9).

Drawing on the limits to tourism growth, Saarinen (2006, 2014) conceptualizes three main perspectives of sustainability in tourism: resource-, industry-, and community-based sustainability. Rooted in positivism and objectivism, the earliest approach in the literature, the resource-based perspective, notes that tourism growth must be adjusted such that no negative impacts and disturbances are imposed on the natural environment. However, the challenge lies in the fact that this approach follows a static view; furthermore, in reality, similar to other human-related activities, any tourism activities might alter the resources. In addition, distinguishing between tourism and nontourism impacts within the same place is subject to debate. In contrast, the activity- or industry-based perspective addresses a more dynamic and

relational view in which tourism growth often transforms resources and is planned based on the needs of tourists and the industry. To reconcile the conflict between the two former perspectives, the most recent perspective is the community-based perspective, which follows constructivism from a subjective view, strives to maintain a balance between the resource- and industry-based approaches, and embeds stakeholders' interests and concerns into tourism development. Here, the limits to tourism growth are socially constructed and negotiated among relevant stakeholders (Saarinen and Gill, 2019). Butler (2015) advocates the latter perspective in light of the local management of tourism, small community-based businesses, the practice of sustainability principles, the usage of local resources and the workforce. The approaches mentioned above, steady-state (Hall, 2010), degrowth (Kallis, 2018), and community-based sustainability (Saarinen, 2006, 2014), are in concert with SBM archetypes (Bocken et al., 2014), which are presented in Section 2.4.1.

Given that nature tourism activities and services rely predominantly on the natural environment, nature tourism may put excessive use on natural resources and cause wildlife disturbances (e.g., Pilcher et al., 2009). Nonetheless, the well-being of many communities depends on this industry, which also puts these communities at risk (Kuenzi and McNeely, 2008). Although some forms of nature (wildlife) tourism, such as whale watching and birdwatching, seem more sustainable than mass urban tourism, they are not necessarily eco-friendly because not all nature lovers and birdwatchers are green and environmentally responsible (Butler, 2018). Likewise, Dolnicar (2015) claims that sustainable tourism cannot be fulfilled merely by targeting responsible tourists without the active contribution of businesses. Furthermore, she highlights four reasons for that: the existence of such tourists is highly suspect, eco-friendly behaviors tend to be changed during a trip, tourists with strong sustainability concerns stay home instead of traveling, and sometimes businesses do not offer sustainable tourism if there is no demand from tourists. However, some studies conclude that birdwatchers might have positive outcomes by contributing to bird conservation (e.g., Green and Jones, 2010; Puhakka et al., 2011).

In summary, while some studies criticize the conceptualization and application of sustainable tourism, others propose the idea of practicing responsible tourism instead. Indeed, truly sustainable tourism does not include an element of traveling (Butler, 2015, 2018), which is all about tourism. In reality, people's travel intentions cannot be controlled and "tourists are unwilling to change almost every aspect of their holiday patterns and choices" (Butler, 2015; p. 73). Even though all the debates over and the critiques of this concept are reasonable, my research pursues the latter perspective in terms of conceptualizing sustainability in tourism

(Butler, 2015; Saarinen, 2019, 2021; Mtapuri et al., 2022). This perspective assumes that tourism has the potential to enhance economic factors (employment, income, tax revenue, etc.) and the social well-being of communities, increase awareness in local society, and preserve natural habitats. This stance can be well-situated and explained through community-based BMs (Saarinen, 2014; Mtapuri et al., 2022). This thesis also adopts Butler's (1993) definition of sustainable tourism (see Section 1.1).

2.2.2. Resilience: a critical element of sustainability

Here, resilience is discussed referring to the concept of sustainability. Corporate sustainability is a broad concept comprising a proper alignment among financial, social, and environmental aspects and being capable of building resilience in a turbulent environment to maintain a sustainable competitive advantage (Hall, 2009; Ortiz-de-Mandojana and Bansal, 2016; Seeler et al., 2021). The concept of resilience first appeared in the field of engineering to measure the capacity of a material to resist physical stress; the later conceptualization of resilience in social sciences (business, environmental and tourism studies) emerged in the early 1990s (Hall et al., 2016; Hall et al., 2017). Resilience is defined by Gössling et al. (2009) as “system's capacity to deal with change and continue to develop” (p.11) and by Hall et al. (2017) as “not only to stability, change and response but also to the capacity to adapt” (p.13). Relatedly, business resilience is the “capacity for an enterprise to survive, adapt, and grow in the face of turbulent change” (Fiksel, 2006, p. 16), a “purposive change in response to the opportunities and demands created by a disturbance” (cited by Hall, 2016 as Colbourne, 2008; p.3), and “embedded in a dynamic process to continuously sustain organizational development to be quickly applied when the next crisis/disaster occurs” (Jiang et al., 2021c; p. 2).

Previous studies have discussed the concept across SMEs; for example, Ates and Bititci (2011) stress the significance of innovative capabilities in making changes through change management processes to build resilience, while Paton and Hill (2006) emphasize that the organizational capability to change and adapt contributes to postcrisis survival capability. Resilient organizations consider crises as opportunities to adapt proactively, radically innovate, become prepared for future crises and review current strategies (Aldunce et al., 2014). Thus, the two components of preplanning and adaptive capacity are highlighted as prerequisites for enhancing organizational resilience (Lee et al., 2013). Relevantly, the three concepts of resilience, adaptive capacity and vulnerability are considered related given that resilient enterprises are less vulnerable due to their stronger adaptive capacity (Biggs et al., 2011).

Resilience, as a key element of and a precondition for addressing sustainable tourism (Biggs et al., 2012; Holladay and Powell, 2013; Espiner et al., 2017), is determined through the responses to uncertainties and changes (Hall, 2018). Without considering resilience, sustainability cannot be actualized, as resilience dynamically incorporates changes (Espiner et al., 2017; Lacey et al., 2018). Jackson (2006) connects the concepts of resilience and sustainability as “the capacity of humans to anticipate and plan for the future” (p.218). A resilient and sustainable community, as Johnston et al. (2006) describe, is less vulnerable to crises, as resilience can result in sustainability (Klein et al., 2003). Moreover, Gössling et al. (2009) and Winnard et al. (2014) apply the concepts of resilience and sustainability interchangeably, as resilience can be applied to put sustainability principles into practice. Hall et al. (2017) point to resilience as the underpinning for sustainability-related decision-making and an indicator of sustainability, because it ensures a long-term perspective and the promise of having a future. Given the above discussion, this thesis considers resilience as a key element of and prerequisite for sustainability (Holladay and Powell, 2013; Hall et al., 2017; Romagosa, 2020). Accordingly, it understands resilience as a dynamic process (Hall et al., 2017; Ortiz-de-Mandojana and Bansal, 2016; Jiang et al., 2021c) focusing on recovery strategies during a crisis. In contrast, resilience as an outcome, which is beyond the scope of this thesis, is assessed after a crisis and linked to the organizational capability to recover from a crisis (Duchek et al., 2019).

2.3. Sustainability innovation

Before the discussion on sustainability innovation begins, innovation theory should be briefly elaborated. Innovation is derived from Latin and means “to introduce something new to the existing realm and order of things” (Carayannis et al., 2003; p.115). The term originated in economics (Swedberg and Granovetter, 2001; Sundbo, 2003). Historically, one of the first authors to discuss innovation in relation to economic development was an economist named Schumpeter (1934). Innovation is interpreted as making changes, either small or large, incremental or radical, to introduce something new for creating value for customers (O’Sullivan and Dooley, 2009). Giving one of the first definitions of innovation, Kanter (1983) defines it as “the generation, acceptance and implementation of new ideas, processes, products or services ... it involves the capacity to change and adapt” (p. 20–21). By adding organizations as a dimension of innovation conceptualization, Dosi (1988) explains innovation as “the search for, and the discovery, experimentation, development, imitation and adoption of new products, new production processes and new organizational setups” (p. 222). The early adoption of innovation was shaped by making distinctions between innovation types, i.e., product versus process, radical versus incremental, continuous versus discontinuous, revolutionary versus evolutionary,

and disruptive versus sustaining (Utterback and Abernathy, 1975; Henderson and Clark, 1990; Anderson and Tushman, 1990; Utterback, 1996; Christensen, 1997).

When the concept of sustainable development was introduced in the 1990s, the academic literature started to grapple with the ability of innovations to embody sustainability and address environmental issues (Jay and Gerard, 2015; Boons and McMeekin, 2019). This literature emerged as a challenge to existing growth assumptions because it viewed sustainability as a potential driving force for innovative transformations resulting in new products and processes (Blum-Kusterer and Hussain, 2001). Later, studies became focused on making organizational improvements, addressing stakeholders' interests, creating competitive advantage, and enhancing profitability and environmental and social performance (Dunphy et al., 2003; Porter and Kramer, 2011; Jay and Gerard, 2015). Hall (2009) stresses sustainability as an innovative idea and an innovation; "with respect to environmental stewardship and the development of an understanding of the extent to which ecological, social, environmental, and political issues are interrelated" (p. 282). Drawing on existing literature, Bocken et al. (2019) have recently defined innovations for sustainability as the "intentional introduction of (radically) new or (incrementally) improved products and services or entire systems, which ..., lead to environmental and (or) social benefits that surpass those of the prior products, services, or systems" (p. 6). Likewise, according to Inigo (2021), a sustainable innovation "departs from the principles of novelty and its exploitation outlined in traditional innovation but adds environmental and social dimensions" (p.996).

In the literature, innovations addressing aspects of sustainability have been labeled eco-innovations (Jones and Corral de Zubielqui, 2017), sustainability innovations (Boons et al., 2013; Arnold, 2017), sustainability-oriented innovations (Hansen and Große-Dunker, 2013; Adams et al., 2016), responsible innovations (Boons and McMeekin, 2019), environmental innovations (Bonte and Dienes, 2013), social innovations (Murphy et al., 2012), and green innovations (Schiederig et al., 2012). Although all these labels strive to describe innovations aimed at incorporating sustainability, they vary in terms of how they handle sustainability. For instance, whereas eco-innovations, environmental innovations, green innovations, social innovations, and responsible innovations relate to either environmental or social challenges, sustainability innovations target sustainability as a broad concept and address social and environmental issues together (Hansen and Große-Dunker, 2013; Adams et al., 2016).

To address sustainability innovations, Jay and Gerard (2015) provide a framework based on three types of innovation tackling sustainability issues (Figure 3). Similarly, across tourism

research, innovation is regarded as relevant to sustainability (Moscardo, 2008; Gössling et al., 2009; Hjalager, 2010). Particularly concerning sustainable tourism, innovations mostly are “incremental, as opposed to disruptive ‘breakthrough’ innovations ... characterized by steady improvement, following cultural routines and norms, rapidly implemented, producing immediate gains ... based on sustaining existing technologies that already exist and are easily adapted for tourism use” (Carlsen et al. 2008; p.120; cited in Bramwell and Lane, 2012). Therefore, unlike industries based on large incumbents and, accordingly more radical innovations (technological breakthroughs), small tourism companies innovate more restrictedly and incrementally (Kallmuenzer and Peters, 2018; Ioannides and Gyimóthy, 2020).

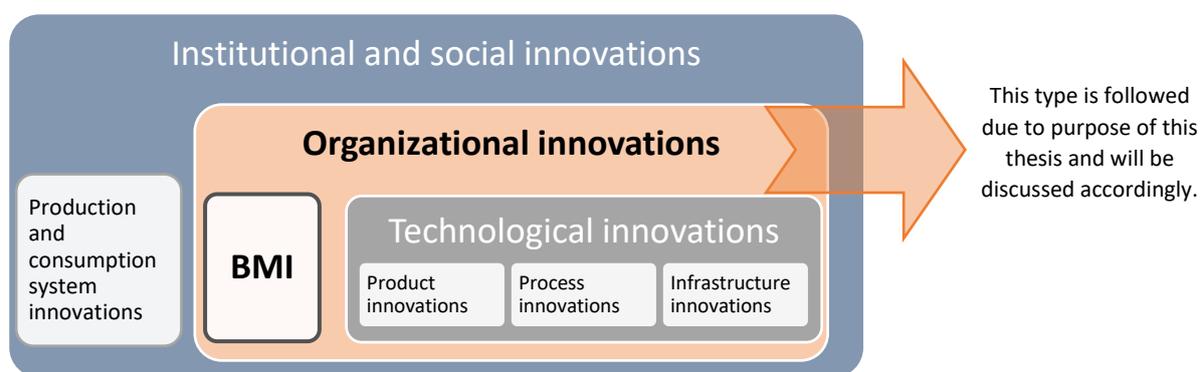


Figure 3: The innovation typology framework adopted from Jay and Gerard (2015)

Notably, Hjalager (2010) identifies different types of tourism innovations: product/service, process, management (marketing), managerial, and institutional innovations. Here, innovation types are discussed based on Hjalager (2010), Jay and Gerard (2015), and Albareda and Hajikhani (2019). Product or service innovations are beneficial for offering a new product or service that yields superior environmental and social performance and relies on customers’ concerns (Nidomolu et al., 2009; Hjalager, 2010). Process innovation can be triggered by product innovations that lead to less pollution, enhanced productivity, and resource efficiency during the processes of production (a product) or delivery (a service) (Jay and Gerard, 2015). Marketing and managerial innovations as Hjalager (2010) suggests, are accommodated to target new customer segments, and bring new methods to internal processes management, respectively. Likewise, such innovations are characterized by Jay and Gerard (2015) as organizational innovations, which are essentially dominated by BMIs; further discussion on this area can be found in Section 2.5. Finally, institutional and social innovations aim to move beyond organizational boundaries. The former seeks to address new collaborative mechanisms and policies across networks and alliances, while the latter focuses on making changes to societal preferences (Hjalager, 2010; Jay and Gerard, 2015). For instance, setting new

regulations, incentives, and educational programs can give rise to sustainability-oriented social and institutional innovations (Jay and Gerard, 2015).

Extending prior literature reviews related to sustainability innovations (e.g., Adams et al., 2016), Albareda and Hajikhani (2019) recognize five key types of innovations for sustainability: strategic, collaborative, organizational, operational, and systemic. Strategic innovation for sustainability gives rise to new business strategies as well as sustainable, shared, and extended value creation through SBMs (Porter and Kramer, 2011; Boons et al. 2013; Zollo et al., 2013; Bocken et al., 2014). The operational type is process oriented and makes the value creation processes more eco-efficient and sustainable (Schaltegger and Burritt, 2014; Boons et al., 2016). The organizational type aims to explore new ways of doing and organizing a business and to identify new capabilities required for conducting such innovations. This type is closely linked to the DCs perspective (e.g., Inigo et al. 2017). Collaborative innovations for sustainability necessitate the integration of stakeholders as key involved partners (Freudenreich et al., 2020) and can benefit from design-thinking methodology and value co-creation (Geissdoerfer et al., 2016). The systemic type focuses on system-level (economy and networks) transformation; social BMs and base-of-pyramid BMs are examples of this type (Bocken et al., 2014). A summary of these five innovation types (Albareda and Hajikhani, 2019) is presented in Table 3 and in comparison with the studies by Hjalager (2010) and Jay and Gerard (2015).

Table 3: Main types of innovations for sustainability based on three studies

Study by	Type 1	Type 2	Type 3	Type 4	Type 5
<i>Albareda and Hajikhani (2019)</i>	Strategic innovations	Operational innovations	Organizational innovations	Collaborative	Systemic
<i>Jay and Gerard (2015)</i>	Product innovations	Process innovations	Organizational innovations	Institutional and social innovations	
<i>Hjalager (2010)</i>	Service innovations	Managerial innovations	Marketing innovations	Institutional innovations	

Given sustainability innovations, the imperative role of BMIs in sustainability integration is highlighted by several studies (e.g., Bocken et al., 2019; Lüdeke-Freund, 2020; Bocken, 2021), as BMIs inform a more comprehensive perspective than product innovation. Some recent studies (Bocken et al., 2019; Bocken, 2021) position BMs (the green shaded area) within the sustainability innovation research spectrum, as depicted in Figure 4. Furthermore, the operationalization of sustainable innovations demands diverse resources and capabilities beyond what an individual enterprise possesses. Therefore, by including various stakeholders, businesses can find creative solutions and implement them successfully (Schaltegger et al., 2018). Lüdeke-Freund (2020) also claims that sustainable innovations, which are

commercialized through innovative BMs have more potential to reach the market. Relatedly, the concepts of BMfS and BMI will be discussed in Sections 2.4 and 2.5.

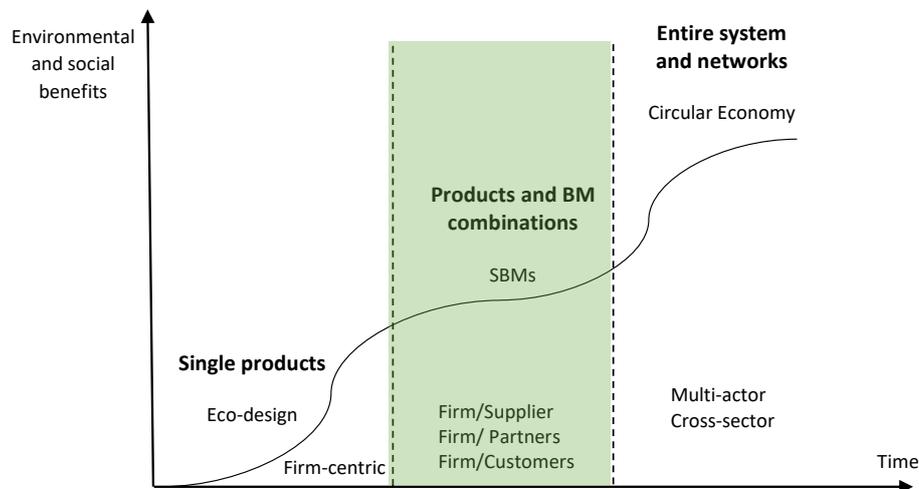


Figure 4: Positioning BMs within sustainability innovation (Bocken et al., 2019; Bocken, 2021)

2.4. Business models for sustainability

Although corporate social responsibility practices, sustainability innovations and eco-innovations prevail in the literature as defining a sustainable economy, they alone are insufficient to ensure fundamental changes for environmental and social sustainability. Thus, what can drive innovations for sustainability rests upon designing an SBM by changing every aspect and purpose of a business (Bocken et al., 2014). The young research field of SBM or BMfS has become highly significant and garnered interest among both scholars and practitioners (Geissdoerfer et al., 2018). This concept is based on the concept of BM. It incorporates “sustainable value creation”, a “long-term perspective” and “stakeholder management” and refers to a network-centric approach instead of a firm-centric approach (Geissdoerfer et al., 2016). Boons and Lüdeke-Freund (2013) define an SBM based on BM change definition as “the implementation of alternative paradigms other than the neoclassical economic worldview ... and thus change the way of doing business towards sustainable development; a sustainable business model is the aggregate of these diverse organizational aspects” (p. 15). By adding three main elements of BMs (Teece, 2010), Geissdoerfer et al. (2018) outline an SBM as “a modification of the conventional BM concept, with certain characteristics and goals added to it ... either 1) incorporate concepts, principles, or goals that aim at sustainability; or 2) integrate sustainability into their value proposition, value creation and delivery activities, and/ or value capture mechanisms” (p.403). Another approach by Moratis et al. (2018) aims to go beyond sustainable outcomes and emphasizes the way that value is created and captured. As claimed by Moratis et al., a BM is sustainable when both the value creation “processes” and business “outcomes” are deemed sustainable.

In contrast to most traditional studies, which explored BMs from an egocentric perspective, akin to the focus of SBMs, several scholars have highlighted “extended value creation” by meeting several stakeholders’ interests (Bocken et al., 2014; Geissdoerfer et al., 2016; Upward and Jones, 2016; Breuer et al., 2018). Therefore, a sustainability-oriented BM necessitates observing both monetary and nonmonetary value as one integrated element (Moratis et al., 2018), but the challenge lies in how sustainable value creation can generate benefits and competitive advantages by informing business cases for sustainability (Schaltegger et al. 2012). More specifically, sustainable value is created by integrating three pillars: making a value proposition for all stakeholders, defining a sustainability-related problem, and proposing a solution through a new product/service (Baldassarre et al., 2017). Hence, the development of SBMs is claimed to enable interactions between a company and its stakeholders by integrating their activities (Breuer et al., 2018). Such interactions can be addressed in light of the boundary-spanning activity system theory by Zott and Amit (2010) who define a BM as “a system of interdependent activities that transcends the focal firm and spans its boundaries” (p. 216).

Drawing on a dynamic perspective, sustainability is also regarded as a “journey” (Milne et al., 2006; Font et al., 2016) or a process of evolution from a purely economic perspective toward environmental and natural considerations (Glavic and Lukman, 2007). This dynamic perspective leads to the identification of two types of sustainability within BMs: strong and weak sustainability. Strong sustainability (radical change) focuses on the complete integration of sustainability into business core processes, while weak sustainability (incremental change) concerns the adaption of some activities, which leads to a partial transformation of a BM (Roome, 2012; Abdelkafi and Täuscher, 2016; Upward and Jones, 2016). Ultimately, strong and weak sustainability “are differentiated by their approach to integration, the ambition of the vision of change, the complexity of the innovation and the extent of collaboration among social, political, and economic actors” (Roome, 2012; p. 626). Considering such a perspective on BMfS, the concept of BM change needs to be clarified. For this purpose, the BM change conceptualization and typologies, the related drivers and DCs will be discussed in Section 2.5. This thesis adopts BM change in a broader sense to address not only radical innovations but also incremental modifications within BMs to address sustainability and resilience. Given the research on SBM, several typologies and tools for designing SBMs are discussed below. In addition, the selected tool and typology applied in article 2, as well as the thesis, are elaborated.

2.4.1. Tools and typologies

Across SBM research, several tools and frameworks have been developed to facilitate the task of designing SBMs for practitioners and researchers (Table 4), for instance, the value mapping tool (Bocken et al., 2013), flourishing business canvas (Upward and Jones, 2016), triple-layered BM canvas (Joyce and Paquin, 2016), the guiding principles (Breuer et al., 2018) and stakeholder value creation framework (Freudenreich et al., 2020). Given this young research field, various tools for SBM development are briefly described in Table 4. The most recent¹ framework by Breuer et al. (2018) is adopted by this thesis because it strives to enhance prior SBM tools via practical guiding criteria that address three extensions: from customers to a variety of stakeholders, from monetary value to nonmonetary value, and from the firm perspective to the system perspective. Notably, Breuer et al. (2018) suggest this framework to address the practical aspects of SBMs by setting four main criteria known as guiding principles. As the minimum requirements for an SBM, these interrelated principles include “sustainability orientation”, “stakeholder integration”, “extended value creation” and “systematic thinking”.

Table 4: A summary of tools for SBM development

Tools for SBM development	Description
The value mapping tool by Bocken et al. (2013)	Aims to analyze value creation from the perspective of multiple stakeholders based on current value propositions, wasted/missed/ destroyed values, and new value opportunities.
The flourishing business canvas by Upward and Jones (2016)	Proposes a template for strongly SBMs, which is made of four propositions (definitions of a strongly sustainable firm, value, a BM, and tri-profit) and five principles (conception, boundaries, validation, viability, social and environmental benefits of a strongly SBM).
Triple-layered BM canvas by Joyce and Paquin (2016)	Guides enterprises in developing more SBMs by adding two layers (canvases) of social and environmental to the economic layer, which is the BM canvas by Osterwalder and Pigneur (2010).
SBM Guiding principles by Breuer et al. (2018)	Suggests four minimum requirements to address SBMs known as guiding principles that include “sustainability orientation”, “stakeholder integration”, “extended value creation” and “systematic thinking”.
The stakeholder value creation framework by Freudenreich et al. (2020)	Focuses on mutual value flows in terms of value exchange between an enterprise and its stakeholders to conceptualize value through multi-directional stakeholder-centric flows instead of uni-directional value flows, which are concentrated mainly on customers and shareholders.

Sustainability orientation explains how much social and environmental concerns are integrated into goals, strategies, and BMs with respect to the Triple Bottom Line, whereas stakeholder integration acknowledges that stakeholders play a key role in the sustainability orientation of a BM and accordingly sustainable value creation (Joyce and Paquin, 2016; Upward and Jones, 2016; Breuer et al., 2018). Relatedly, extended value creation rests upon value creation for relevant stakeholders including society and the environment (Joyce and Paquin, 2016).

¹ The most recent with respect to article 2, which I started to develop in summer 2018.

Systematic thinking aims to encourage a more holistic perspective where a business is a social entity within other systems and networks (Upward and Jones, 2016). Following article 2, this thesis applies this framework in Chapter 5 to discuss the empirical findings.

In addition to various tools, several SBM typologies have emerged in the literature to categorize various BMs in view of sustainability principles. For instance, based on a literature review related to SBMs, Bocken et al. (2014) propose eight distinct SBM archetypes, which are elaborated in terms of three elements of a BM (Teece, 2010). These archetypes are summarized in Table 5. As Bocken et al. (2014) suggest, these archetypes can inspire companies that aim to practice corporate sustainability; a company can choose one or a combination of several archetypes for guidance to shape sustainable value creation and to change their BMs.

Table 5: The SBM archetypes adopted from Bocken et al. (2014; p. 48-54)

Archetypes	Value proposition	Value creation and delivery	Value capture
“Maximize material productivity and energy efficiency”	Offering products and services of similar features while minimizing resource consumption and pollution generation	Activities and processes are Focused on efficiency by minimizing waste and resource usage	Cost reduction is a result of the optimum allocation of resources.
“Create value from ‘waste’”	Reusing of wastes into new value	Activities and processes are focused on recycling	Cost reduction as a result of reusing waste into valuable products.
“Substitute with renewables and natural processes”	Decreasing emissions, and the ecological footprints by applying renewable resources as opposed to non-renewable ones	Conducting innovative solutions in terms of applying renewable resources through designing activities and processes	Earning revenue from new offers, and value creation for the environment through restricted usage of non-renewable resources and reduced emissions.
“Deliver functionality, rather than ownership”	Shifting the perspective from offering physical products to a bundle of products and services	Conducting radical changes to redesign the offers to provide functionality instead of ownership	Earning revenue from what customers pay for the service and not for the product ownership.
“Adopt a stewardship role”	Focusing on the stakeholders’ involvement to ensure their well-being through the creation of social and environmental value	Activities and processes are designed mainly concerning the welfare of the stakeholders	Putting forth the stakeholders’ welfare can entice customers to fund by paying a price premium.
“Encourage sufficiency”	Concentrating on influencing customers’ behavior to reduce over-consumption	Activities and processes are developed to encourage less waste as well as consumption and to educate consumers	Society and customer education, encouraging customers to pay price premiums.
“Re-purpose the business for society/environment”	The delivery of environmental and social values is prioritized over financial benefits	Activities and processes are designed to ensure the creation of social as well as environmental value	Ensuring resilience by taking care of the societal and environmental stakeholders.
“Develop scale-up solutions”	Innovative sustainable solutions to address the societal and environmental challenges at a large scale	Putting sustainable solutions into practice through developing related processes and partnerships	Earning revenue from selling large-scale sustainable solutions.

Although the archetypes mostly address manufacturing and industrial BMs, three of them can be relevant to the tourism sector, especially for small nature tourism companies, such as “adopt a stewardship role”, “re-purpose the business for society/environment” and “encourage sufficiency”. For instance, “steady-state” tourism, which informs sustainable consumption and

sufficiency elements, as suggested by Hall (2007; 2010), resonates with “encouraging sufficiency” (Bocken et al., 2014). Tourism degrowth is also in concert with SBMs, which reside on “maximizing material productivity and/or energy efficiency” and/or “creating value from waste” and/or “re-purposing the business for society/environment” (Bocken et al., 2014). Furthermore, Saarinen’s (2006, 2014) community-based sustainability approach addresses the Triple Bottom Line perspective and community-based BMs (Butler, 2015; Dybdahl, 2019; Høegh-Guldberg et al., 2022; Mtapuri et al., 2022), which “adopt a stewardship role” or “re-purpose the business for society/environment” (Bocken et al., 2014).

By building upon the review by Bocken et al. (2014), Ritala et al. (2018) explore the environmental and social business practices to address SBMs among S&P 500 firms. By adding a new archetype – “inclusive value creation” – in addition to the archetypes of Bocken et al., their study proposes three main clusters, environmentally oriented, social, and economic to accommodate nine archetypes. Inclusive value creation is characterized by “sharing resources, knowledge, ownership, and wealth creation” (Ritala et al., 2018; p.219). Likewise, another review study by Lüdeke-Freund et al. (2018) proposes an SBM pattern taxonomy comprising 11 groups made of 45 patterns composed of social, environmental, and economic value creation.

Table 6: The Business Sustainability Typology (Dyllick and Muff, 2016) with respect to three main ontologies (Ritala, 2019)

Business Sustainability Typology	Value created	Related ontology
<i>Business sustainability 1.0</i>	Refined shareholder value	Skepticism
<i>Business sustainability 2.0</i>	Triple bottom line	Pragmatism
<i>Business sustainability 3.0</i>	Value creation for the common good	Idealism

By focusing on effective contributions to sustainable development, Dyllick and Muff (2016) propose the Business Sustainability Typology (Table 6) to analyze the integration of sustainability and thus differentiate BMs. The starting point is “business-as-usual”, which is basically focused on maximizing market value and creating economic value for shareholders, customers and management. Bocken et al. (2014) argue that these BMs are not “an option for a sustainable future” (p.42). The first category that informs SBMs is “Business Sustainability 1.0”. Although such BMs attempt to address risks and opportunities related to environmental and social concerns, which are mainly raised by the regulations, the focus is still on value creation for shareholders. Here, sustainability is integrated into BMs without resulting in change across core processes. With “Business Sustainability 2.0”, the company broadens its perspective from economic value for shareholders to value creation for society and nature. Accordingly, sustainable value is created through concrete goals associated with sustainability issues (Elkington, 1997). Finally, in “Business Sustainability 3.0”, the concern is to develop

products and services in the form of solutions for overcoming sustainability issues. Such BMs are established upon turning such issues into opportunities and moving beyond minimizing negative impacts by making significant and positive contributions (Dyllick and Muff, 2016).

Relying on systems thinking, a recent study by Ritala (2019) proposed three main ontologies, “skeptical, pragmatic and idealist”, related to how businesses effectively contribute to sustainability innovations, of which idealism and skepticism are the extreme stances and pragmatism is the middle stance (p. 23-24). From a skeptical perspective, innovations for sustainability are mainly geared toward economic value creation and profit maximization rather than social and environmental value creation. Therefore, such innovations turn out to be more incremental. “Business Sustainability 1.0” (Dyllick and Muff, 2016) reflects this ontology (Table 6). Based on pragmatism, innovations have the potential to slowly reduce the negative impacts of business practices on the environment and gradually improve social well-being. This stance informs Dyllick and Muff’s “Business Sustainability 2.0”. The most radical stance, idealism, which resonates with “Business Sustainability 3.0”, holds the assumption that innovations can primarily be targeted to define a solution for sustainability issues. Drawing on the path toward sustainability envisioned by Dyllick and Muff (2016) and Ritala (2019), it can be concluded that the extent to which sustainability is integrated into BMs varies. Inspired by the latter typology and Ritala’s ontologies, I discuss the findings with regard to sustainable practices and stimulating BMs toward sustainability in Figure 8 and Chapter 5.

2.5. Business model change conceptualization

To form a practical conceptualization of BM change as a basis for this thesis, the literature is reviewed in this section. BM change has been conceptualized under various labels, for instance, BMI (Casadesus-Masanell and Zhu, 2013; Kindström and Kowalkowski, 2015; Colombo et al., 2015; Stampfl, 2016; Foss and Saebi, 2017; Snihur and Zott, 2020), BM evolution (Demil and Lecocq, 2010), BM transformation (George and Bock, 2011; Geissdoerfer et al., 2018), new BM (Schneider and Spieth, 2013; Mezger, 2014), and BM change itself (Cavalcante et al., 2011; Roome and Louche, 2015; Saebi, 2015; Santos et al., 2015; Gauthier and Gilomen, 2016). BM change is defined as “the process by which management actively alters the intra-organizational and/or extra-organizational systems of activities and relations of the BM in response to changing environmental conditions” (Saebi 2015; p. 148). Hence, entrepreneurs need to rethink BMs in terms of value creation, delivery and capture to respond to market trends and changes in the business environment (Inigo et al., 2017). Similarly, BM evolution is explained by Demil and Lecocq (2010) as “a fine-tuning process involving voluntary and emergent changes in and

between permanently linked core components” (p. 227). Casadesus-Masanell and Zhu (2013) define BMI as “the search for new logics of the firm and new ways to create and capture value for its stakeholders; it focuses primarily on finding new ways to generate revenues and define value propositions for customers, suppliers, and partners” (p. 464). Moreover, Kindström and Kowalkowski (2015) and Foss and Saebi (2017) touch on radical changes through the inclusion of all BM components versus incremental changes to a particular component or components.

Cavalcante et al. (2011) emphasize the core repeated processes of a BM in any attempt to change the BM. These processes are a set of activities performed regularly to achieve key strategic goals. It is argued that not all changes in an organization result in a change to BMs; only changes to core repeated processes affect BM change (Cavalcante et al., 2011). Across the literature, product innovations are interpreted differently from BMIs (Bucherer et al., 2012); thus, these two innovation types are not the same, yet innovative products can result from BMIs, which can therefore influence organizations more broadly than product innovations can (Stampfl, 2016). New BMs, as Mezger (2014) stresses, are not necessarily focused on new product development or technological innovation; rather, they are created to reconsider the current structural development of an industry, customer segments and related assumptions about their preferences to target new markets and customer segments. Such innovative BMs are configured by changing value proposition, creation or capture mechanisms (Chesbrough and Rosenbloom, 2002; Teece, 2010) and are operationalized by adopting new activities, resources, and competencies (Johnson et al., 2008; Zott and Amit, 2010; George and Bock, 2011).

2.5.1. Business model change typologies

Drawing on the BMI literature, Geissdoerfer et al., 2018 recognize four configurations of BMI: start-ups, BM acquisition, BM diversification, and BM transformation. Geissdoerfer et al. (2018) relate BMIs to “the development of entirely new BMs, the diversification into additional BMs, the acquisition of new BMs, or the transformation from one BM to another” (p.406). Due to the relevance of BM transformation to this thesis, its definition is included here. BM transformation refers to an existing BM transforming into another BM (Geissdoerfer et al., 2018). Likewise, Schneider and Spieth (2013) note that BMIs are configured through BM adaptations or new BMs; the former focus on existing BMs, while the latter introduce new ones. Additionally, Cavalcante et al. (2011) specify four types of BM change: BM creation, which refers to the conceptualization of a completely new BM that did not exist previously; BM extension, which expands the business while maintaining the existing BM’s main processes. BM revision, which involves replacing the current BM with a new BM; and BM termination,

which involves dropping the current BM. Likewise, Santos et al. (2015) propose a typology of BM change comprising the four categories of action: reactivating, relinking, repartitioning, and relocating. Reactivations rely on either removing or adding activities to existing BMs, whereas relinking focuses on changing the relationships among activities through either regoverning the transactions between a firm and market or resequencing the ordering of business units. While repartitioning takes place by moving business units through insourcing or outsourcing, relocating is when a business unit moves geographically from a home country to a foreign country (Santos et al., 2015).

Drawing on prior literature on BM change, Saebi (2015) provides a three-part typology: BM evolution, BM adaptation, and BMI. BM evolution (Demil and Lecocq, 2010) seeks to explain the incremental changes and adjustments in existing BMs; BM adaptation (Sosna et al., 2010; Teece, 2010) concentrates on adaptations continuously carried out to respond to market changes; in contrast, BMIs (Chesbrough, 2010; McGrath, 2010) are geared toward conducting disruptive innovations through “the process by which management actively innovates the internal and/ or external dimensions of the BM” (Saebi, 2015; p. 149). Moreover, Gauthier and Gilomen (2016) propose a typology that classifies BM change into four groups along a continuum. First, a BM as usual is when no change is detected, whereas BMA takes place through marginal transformations in BM components. They introduce two other categories that are manifested through BMIs, when substantial changes occur in BM components, and BM redesign, when BM components go through radical change (Gauthier and Gilomen, 2016).

Table 7: BM change/innovation typologies across the literature

Source	BM change typologies
Cavalcante et al. (2011)	BM creation, BM extension, BM revision and BM termination
Schneider and Spieth (2013)	BM adaptation and new BM
Saebi (2015)	BM evolution, BM adaptation, and BMI
Santos et al. (2015)	BM reactivating, BM relinking, BM repartitioning, and BM relocating
Gauthier and Gilomen (2016)	BM as usual, BMA, BMI and BM redesign
Geissdoerfer et al. (2018)	Start-ups, BM acquisition, BM diversification and BM transformation

Drawing on this literature review about BM change and innovation, Table 7 summarizes and demonstrates various typologies. What this body of literature has in common is as follows:

1. BM is seen as a dynamic construct;
2. Changes are deliberately incorporated into the components of a BM;
3. Like in innovation studies in terms of radical versus incremental, BM change can also be located along a continuum; and
4. BM changes are closely related to change drivers.

According to the literature, BMI is the most commonly used concept (Demil and Lecocq, 2010; Casadesus-Masanell and Zhu, 2013; Schneider and Spieth, 2013; Colombo et al., 2015; Souto, 2015; Stampfl, 2016; Foss and Saebi, 2017; Cheah et al., 2018; Geissdoerfer et al., 2018; Snihur and Zott, 2020; Breier et al., 2021). Whereas some studies conceptualize BMI as a radical BM change (Saebi, 2015; Gauthier and Gilomen, 2016), Geissdoerfer et al. (2018) conceptualize BM transformation – which is used in other studies to explain BM change – as a type of BMI. Others apply these two concepts interchangeably (George and Bock, 2011; Casadesus-Masanell and Zhu, 2013; Schneider and Spieth, 2013; Colombo et al., 2015; Breier et al., 2021). This thesis adopts the former conceptualization, which applies **BMI** as a *radical type of BM change* (Saebi, 2015; Gauthier and Gilomen, 2016; Saebi et al., 2017). To elaborate on changes to BMs, this thesis views a BM change as closely linked to internal and external factors that trigger and give rise to such changes. For this purpose, the next sections discuss drivers and DCs.

2.5.2. Drivers

Exploring change drivers by examining the link between the business environment and an organization's responses has a long history in management and organizational studies (Burns and Stalker, 1961; Harvey, 1968; Hannan and Freeman, 1977; Nelson and Winter, 1982; Hrebiniak and Joyce, 1985; Teece et al., 1997). Moreover, several studies in tourism (Sampaio et al., 2012), and nature tourism (Font et al., 2016; Hoarau-Heemstra and Eide, 2016; Kallmuenzer et al., 2018) have examined drivers underlying innovations for sustainability and sustainable value creation. BMs evolution is due to external and internal drivers (Demil and Lecocq, 2010; Zollo et al., 2013; Saebi, 2015; Bossle et al., 2016; Foss and Saebi, 2017; Rauter et al., 2017; Näyhä, 2020). It is internally driven through managers' values, managerial cognitive processes, leadership, organizational culture, and employee commitment (Sampaio et al., 2012; Boons and Lüdeke-Freund, 2013; Font et al., 2016; Hoarau-Heemstra and Eide, 2016; Stampfl, 2016; Andreini and Bettinelli, 2017; Foss and Saebi, 2017; Rauter et al., 2017; Miras-Rodriguez et al., 2018; Pieroni et al., 2019; Bocken and Geradts, 2020; Näyhä, 2020). Organizational capabilities and corporate sustainability responsibility activities (Andreini and Bettinelli, 2017), DCs and corporate strategies (Bossle et al., 2016; Foss and Saebi, 2017; Rauter et al., 2017; Näyhä, 2020) may drive BM transformations internally. The pursuit of long-term sustainability goals (Ortiz-de-Mandojana and Bansal, 2016; Miras-Rodriguez et al., 2018; Bocken and Geradts, 2020) and cost savings (Garay and Font, 2012; Bossle et al., 2016; Hoarau-Heemstra and Eide, 2016; Spieth et al., 2018; Näyhä, 2020) can stimulate BM changes.

External drivers are related to changes to business surroundings, specifically in terms of the entrance of new competitors and the status of key resources, for instance, cost increase for acquiring some resources or even new available substitutions for current resources, while internal drivers can be interpreted in terms of internal knowledge on the efficient usage of key resources, which leads to innovative value propositions (Demil and Lecocq, 2010). Prior literature has provided insights into what can trigger BMIs, for example, meeting the challenges of intense competition and strategic disruptions (Johnson et al., 2008; Doz and Kosonen, 2010; Foss and Saebi, 2017), financial crises, economic pressures, changes in customer preferences, entry into new markets, problems or issues, and changes in technologies (Markides, 2006; Sosna et al., 2010; Sánchez and Ricart, 2010; Roome and Louche, 2015; Bossle et al., 2016; Stampfl, 2016; Teece, 2018). In addition, given external drivers across the literature, sustainability opportunities (Andreini and Bettinelli, 2017) and seeking social acceptance (Hoarau-Heemstra and Eide, 2016; Kallmuenzer et al., 2018; Näyhä, 2020) can drive BMIs for sustainability. Cooperation across the company's network and stakeholder demand (Zollo et al., 2013; Bossle et al., 2016; Font et al., 2016; Hoarau-Heemstra and Eide, 2016; Stampfl, 2016; Foss and Saebi, 2017; Andreini and Bettinelli, 2017; Miras-Rodriguez et al., 2018; Spieth et al., 2018; Näyhä, 2020), as well as regulations (Bossle et al., 2016; Rauter et al., 2017; Kallmuenzer et al., 2018; Näyhä, 2020) and policy-makers (Zollo et al., 2013; Näyhä, 2020), can also spark transformations. Finally, several recent studies regard crises (Bocken and Geradts, 2020; Kraus et al., 2020; Morgan et al., 2020; Ritter and Pedersen, 2020; Breier et al., 2021; Jiang et al., 2021b; 2021c) as a driver underlying changes and innovations in BMs.

2.5.3. Dynamic capabilities

The DC approach originated from strategic management research and Barney's (1991) resource-based view, and it contributes to extending the resource-based view by shifting the perspective from static to dynamic (Ambrosini et al., 2009; Teece et al., 1997; Teece, 2007). Barney's resource-based view seeks to determine the sustainable competitive advantage of firms through their tangible and intangible resources. They are defined as "all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc. controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness" (Barney, 1991, p.101). This theory follows a static approach, failing to incorporate the dynamic aspect of resources and capabilities to cope with environmental volatility to create a competitive advantage. Hence, the concept of DC is defined by Teece et al. (1997) as "the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environment" (p. 516). Since then, DCs theory was

extended by several conceptual studies (Eisenhardt and Martin, 2000; Zollo and Winter, 2002; Zahra et al. 2006; Helfat et al., 2007; Teece, 2007; Ambrosini et al., 2009) and subject to critiques (e.g., Easterby-Smith et al., 2009; Peteraf et al., 2013; Wilden et al., 2016).

For instance, Zollo and Winter (2002) claim that the definition by Teece et al. (1997) views DCs only in light of “rapidly changing environments”; nevertheless, firms also need to reconfigure their resource base and competences in low-intensity market competition. Furthermore, Zollo and Winter differentiate between operational routines and DCs (higher-order capabilities). DCs are critical capabilities for shaping and modifying operational routines (Zollo and Winter, 2002), which are referred to as ordinary capabilities by Zahra et al. (2006) as “the set of abilities and resources that go into solving a problem or achieving an outcome” (p. 921). Later, Winter (2003) suggested another hierarchy composed of zero-order (operational), first-order (dynamic), and second-order (learning) capabilities. Similarly, second-order capabilities contribute to modifying first-order capabilities. Additionally, Ambrosini et al. (2009) propose three levels of DCs: “incremental” and “renewing” DCs focus on the resource base through continuous improvements to adapt and refresh them, respectively, while “regenerative” DCs serve to regenerate the existing set of incremental and renewing DCs.

Among others, Easterby-Smith et al. (2009) found three critical discourses in the DCs literature. The first discourse, as identified by Easterby-Smith et al., takes the DCs perspective of Eisenhardt and Martin (2000), who call the approach of Teece et al. (1997) into question. As the latter approach is claimed (Eisenhardt and Martin, 2000) to be more applicable to moderately changing markets and not highly volatile markets, which might distort the sustainability of DC processes. Eisenhardt and Martin (2000) define DCs as “the organizational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve, and die” (p.1107). The second discourse, which gives rise to DCs hierarchies (mentioned earlier), is established based on the relationships and distinctions between routines and capabilities. Finally, the third discourse, which Easterby-Smith et al. (2009) stress, is “semantic” rather than conflicting and is related to the role of learning either as processes that underpin DCs (Teece et al., 1997), or mechanisms underlying the evolution of DCs (Eisenhardt and Martin, 2000), or a second-order DC (Zollo and Winter, 2002).

Notably, Peteraf et al. (2013) suggest that DCs research is primarily influenced by Teece et al. (1997) followed by Eisenhardt and Martin (2000), and they regard these two approaches as being in agreement and as complementing each other, despite the contradictory views on boundary conditions and the sustainability of competitive advantage in highly volatile markets.

Likewise, Wilden et al. (2016) and Schilke et al. (2018) emphasize that these two approaches can converge and coexist even more closely than what has been stressed by Peteraf et al. (2013).

Based on Teece et al.'s (1997) approach, Helfat et al. (2007) define a DC as the “capacity of an organization to purposefully create, extend or modify its resource base” (p.4). This approach further has been developed by Teece (2007) by proposing that DCs consist of activities/the ability to sense opportunities and threats, seize opportunities, and thereby transform BMs. However, only firms that have sensing abilities can realize the need for BMIs (Foss and Saebi, 2015). Hence, the ability to sense when there is a need to change a BM is critical and requires strong DCs (Teece et al., 1997; Teece, 2007, 2018). Leih et al. (2015) conceptualize sensing as scanning the market, new technologies and customers' needs while seizing takes place after sensing and calibrating opportunities by mobilizing the required resources. Sensing and seizing activities set the scene for changes across BMs to address emerging opportunities and threats (Leih et al., 2015). Parallel to sensing and seizing, the entrepreneurship literature discusses opportunity recognition and exploitation (Shane and Venkataraman, 2000; Audretsch and Belitski, 2013; McDermott et al., 2018).

This thesis adopts the Teece (2007, 2018) conceptualization of DCs because this perspective sheds light on the critical processes (sensing, seizing, and transforming) underlying the development of DCs that are closely linked to the concept of BMI. However, Eisenhardt and Martin's (2000) approach basically concerns strategic decision-making and product development, and the overall logic of a BM is not included. DCs are claimed to have a close link to BMI in terms of development and operationalization (Leih et al., 2015), and BMI is deemed necessary when entrepreneurs are confronted with disruptions in the market. Indeed, entrepreneurs “bear the primary responsibility for recognizing the need for business model change, for adjusting or inventing business models, for orchestrating the necessary assets, and for (re)structuring the organization as needed” (Foss and Saebi, 2015; p. 15). As Cavalcante et al. (2011) assert, the adoption of BM change types depends on DCs (Teece, 2007, 2018). Research has probed the link between DCs and BMI (Mezger, 2014; Leih et al., 2015; Saebi, 2015; Inigo et al., 2017; Schilke et al., 2018). Having a close link to the operationalization of BMIs, DCs rely on management skills and organizational learning and enhance the ability to survive a turbulent environment in the long run because they determine the extent to which a firm is flexible and agile enough to align its BM to respond to drivers (Leih et al., 2015). To operationalize DCs, companies need to institute different sets of entrepreneurial practices oriented toward handling changes to BM components (Mezger, 2014; Saebi, 2015; Inigo et al.,

2017; Teece, 2018). For instance, across the literature, DCs are discussed in terms of routines and outcomes (Kump et al., 2019); business activities and practices (Mansour et al., 2019; Jiang et al., 2021a, 2021b); and entrepreneurial, managerial, and organizational activities and processes (Teece, 2007; Mezger, 2014; Leih et al., 2015; Saebi, 2015; Inigo et al., 2017).

BM literature indicates that the concept of BM change is itself viewed as a DC (Demil and Lecocq, 2010; Achtenhagen et al., 2013; Saebi, 2015). To change BMs effectively, Saebi (2015) argues that firms should cultivate a capability called “BM change capability”, defined as “the firm’s capacity to adjust, adapt, and innovate its BM in the face of environmental dynamics” (p. 157). Given the BM change typology – BM evolution, adaptation, and innovation – Saebi (2015) suggests three types of DCs: evolutionary, adaptive and innovative change capability. Evolutionary change processes concentrate on incremental and low-intensity adjustments to maintain existing BMs, whereas adaptive change processes rely on the periodic alignment of BMs to respond to the competitive environment. In the most radical form, innovative change processes seek to bring BMI into existence to address a turbulent environment through innovative ways of value creation, delivery and capture (Saebi, 2015).

In addition, DCs help establish and advance the firm’s adaptive capacity, that is, its capacity to adapt to and cope and eventually enhance its resilience (Gallopín, 2006; Barreto, 2010). As such, DCs are focused on building resilience and a sustainable competitive advantage (Kurtz and Varvakis, 2016; Mansour et al., 2019; Jiang et al., 2019; 2021a, 2021b), and more importantly, according to Demil and Lecocq (2010), corporate sustainability depends on DCs. DCs are generated over time (Eriksson, 2014; Schilke et al., 2018; Jiang et al., 2021b); thus, they inform a dynamic learning approach toward making new BMs more resilient in the future. Given that environmental dynamism is a critical factor in shaping DCs (Schilke et al., 2018), when facing a competitive environment, it is often more feasible for companies to mobilize resources to create sustainable value. However, in a crisis, extreme uncertainty and unexpected consequences may change the trade-offs among sustainability pillars in regard to financial viability (Ortiz-de-Mandojana and Bansal, 2016) because environmental and social value creation can occur only if financial survival is ensured (Kallmuenzer et al., 2018).

2.6. Recap of chapter and research purpose

In this chapter, the theoretical underpinning for this thesis is delineated to lay the basis for the research purpose, which seeks to scrutinize BMs from a dynamic perspective to shed light on the concept of BM change in striving for sustainability and resilience through relevant drivers

and DCs. For this purpose, one overall research question is formulated, and accordingly, four sub-research questions are posed through three articles.

Notably, sustainability innovation has gained increased attention among scholars to provide a more comprehensive understanding of the business practices that make societies more sustainable (Boons and Lüdeke-Freund, 2013; Lüdeke-Freund, 2020). Indeed, BMs are regarded as promising because different types of innovations can be materialized through BMs when various challenges are also addressed (Zott et al., 2011; Wirtz et al., 2016). By embedding social and environmental aspects in BMs in addition to a long-term perspective, BMfS leads companies to build their competitive advantage by focusing on creating positive social values and minimizing the negative impacts of business on nature (Lüdeke-Freund et al., 2018; Rauter et al., 2017). In sustainability research, researchers emphasize the imperative role of SBMs in ensuring sustainable societal development (Bocken et al., 2014; Schaltegger et al., 2015; Geissdoerfer et al., 2016; Upward and Jones, 2016). Although BMI for sustainability is understood as a key factor in improving performance, creating competitive advantage and enhancing corporate sustainability (Bocken et al., 2014; Sousa-Zomer and Cauchick-Miguel, 2019; Bocken and Geradts, 2020; Lüdeke-Freund, 2020), there is a lack of knowledge on the antecedents to BMI to explain how BMs are actually changed (Foss and Saebi, 2017; Saebi et al., 2017; Snihur and Zott, 2020; Zhang et al., 2021).

As a prerequisite for corporate sustainability, resilience is understood in terms of specifying whether a BM can potentially create sustainable value (Hall, 2009; Ortiz-de-Mandojana and Bansal, 2016; Hall et al., 2017; Lacey et al., 2018; Romagosa, 2020); therefore, a BMfS needs to be resilient to shocks to create sustainable value (Geissdoerfer et al., 2016). Like sustainability, in terms of a proper balance, resilience is a dynamic and adaptive process for tackling disruptions and uncertainties and cannot be guaranteed over time (Ortiz-de-Mandojana and Bansal, 2016; Duchek, 2020; Jiang et al., 2021c). In tourism research, resilience is articulated in relation to change by proposing innovations (Lacey et al., 2018), and developing strategies and diverse adaptations that prevent threats to sustainability from arising (Espiner et al., 2017). Compared to scholars in other disciplines, tourism scholars have been relatively slow to embrace the resilience concept (Cheer and Lew, 2018), and despite its significance for small tourism firms as a key indicator of sustainable tourism (Biggs et al., 2012; Espiner et al., 2017), business resilience has not yet been broadly explored (Orchiston et al., 2016; Hall et al., 2017).

Unlike some studies that conceptualize BMI as an outcome (Souto, 2015; Foss and Saebi, 2017), this thesis conceptualizes BM change as a continuous process. The pursuit of a dynamic

approach is beneficial for addressing change, regardless of its purpose (Pieroni et al., 2019) because a static approach does not have the capacity to address how BMs evolve. The dynamic perspective on BMs echoes the dynamism that is experienced through interaction between businesses and their volatile surroundings, meaning that BM design is not a one-time practice because there is no single configuration of BM components that can be permanently applicable. What may be practical then is relying on the transformational processes underlying BM change.

Prior studies relate BM change to drivers (Demil and Lecocq, 2010; Zollo et al., 2013; Saebi, 2015; Bossle et al., 2016; Foss and Saebi, 2017; Rauter et al., 2017) and confirm that companies need to build DCs to change their BMs and enhance their resilience (Leih et al., 2015; Kurtz and Varvakis, 2016; Duchek, 2020). This action defines the firm's strategic and immediate responses and helps insure survival and sustainability in the future (Schilke et al., 2018; Jiang et al., 2021a). A driver stimulates recognition of needed changes, whereas DCs define how quickly a company reacts to drivers. Thus, DCs are vital in shaping the response to drivers and determining the failure and success of BM changes (Teece, 1997; Saebi et al., 2017; Pieroni et al., 2019; Bocken and Geradts, 2020). Both DCs and resilience resonate with a dynamic perspective (Kurtz and Varvakis, 2016; Duchek, 2020; Jiang et al., 2021c) in which BMs are relevant, flexible tools for putting innovations into practice (Teece, 2010). BM change, drivers, and DCs are interrelated, and the antecedents of BM change vary in level and nature (Eriksson, 2014; Foss and Saebi, 2017). Moreover, research streams on drivers and DCs overlap; while some perceive *DCs* as *internal drivers* (Foss and Saebi, 2017; Zhang et al., 2021), others conceptualize *drivers* as the antecedent to *DCs* (Eriksson, 2014; Schilke et al., 2018) or *DCs* as enablers and facilitators (Seelos and Mair, 2007; Bocken and Geradts, 2020). Following prior studies (Eriksson, 2014; Leih et al., 2015; Saebi, 2015; Schilke et al., 2018; Bocken and Geradts, 2020), this thesis treats drivers as antecedents and DCs as enablers that are integral to BM change. Figure 5 presents the conceptual framework, which draws upon the previous literature, as it will lead the discussion of the main findings.

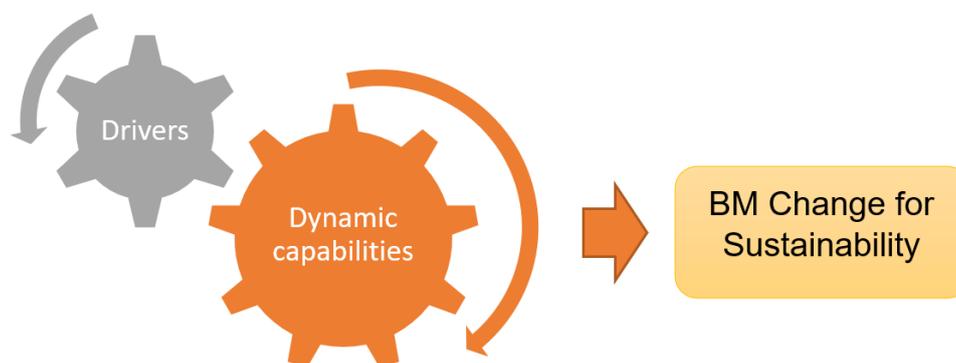


Figure 5: Conceptual framework of the thesis

3. Research methods

In this chapter, the philosophical assumptions, research design and methodological considerations are discussed. The aim is to reflect on this thesis's philosophical stance that leads to relevant ontological and epistemological assumptions that underpin the research design. By adopting an abductive approach, social constructivism is discussed following this part to set the scene for the choice of methodology and methodological reflections.

3.1. Research philosophy

To begin the discussion on the philosophical positioning of this thesis, ontology and epistemology should be explained. Whether implicitly or explicitly, a researcher always holds a set of epistemological and ontological assumptions (Burrell and Morgan, 2016; Eriksson and Kovalainen, 2016), and these form the understanding of the research questions, the justification of the methodological choice, and the interpretation of the research results (Crotty, 1998). Ontological assumptions strive to understand the reality and the relationships among social entities (Eriksson and Kovalainen, 2016). They are shaped either objectively when reality is understood by means of observations outside of social entities, or subjectively, when they are based on the reality that is socially constructed and made sense of by individuals through their perceptions (Saunders et al., 2009; Creswell, 2013; Laukkanen, 2019). Epistemology concerns knowledge in terms of what it is, what embodies it and how to communicate it (Burrell and Morgan 2016; Eriksson and Kovalainen, 2016). Through epistemologies, researchers articulate their choice of methodology based on the type of knowledge, which varies from facts and numerical values (objectively) to perceptions and texts (subjectively) (Saunders et al., 2019).

Following a brief discussion of four main philosophical positions, I reflect upon the chosen philosophy of this thesis – social constructivism – and my reasoning. Later, I outline how I collected and analyzed the data on the basis of relevant philosophy and theory development approaches underpinning the methodological choice of research. The positivist stance aims to understand a social reality by measuring and observing facts (Remenyi et al., 1998) to develop and test hypotheses based on existing theories (Saunders et al., 2009) through a deductive approach and quantitative methods (Eriksson and Kovalainen, 2016). Critical realists are more subjectivist than positivists, believe that knowledge is socially constructed (Eriksson and Kovalainen, 2016), and simultaneously strive to understand a phenomenon through its underlying observable elements (Bhaskar, 1989). Based on pragmatism, ontology and epistemology are determined by the research questions, as the emphasis is on the generation of practical outcomes (Kelemen and Rumens, 2008). Pragmatists implement a mix of both quantitative and qualitative methods (Creswell, 2013). Social constructivism and interpretivism

are often regarded as being the same (Eriksson and Kovalainen; 2016; Creswell and Poth, 2018). Constructivists believe in multiple realities, which are viewed as dynamic subjective meanings and made through social interactions within a group of people (researcher and informants) at a specific time and place (Charmaz, 2014; Eriksson and Kovalainen; 2016).

Likewise, drawing on the BM literature (Massa et al., 2017; Reinhold et al., 2017), three interpretations – ontological stances – exist: BMs as objects, cognitive schemas, and tools. As objects, BMs are envisioned through firms' real attributes and measured directly through activities, products, and processes (Reinhold et al., 2018). Such interpretation is induced by a positivistic stance to empirically test hypotheses on relationships between BMs and firm performance (Massa et al., 2017). Next, BMs are characterized by cognitive images and implicit mental models of real activities that managers develop to conduct their businesses (Martins et al., 2015). Positioning between the two former interpretations, the third interpretation of BMs, as conceptual tools, portrays them through their main components. With respect to the conceptualization of BMs (ontology), this thesis regards a BM as a tool/conceptual model encompassing value proposition, creation, and capture.

Therefore, article 2 is driven by the generic definition of BM by Teece (2010), while articles 1 and 3 adopt the BM canvas by Osterwalder and Pigneur (2010) in addition to the former definition. To obtain an overview of BM components, in the previous chapter, Section 2.1.2 presents the fundamental components of a BM. Relying on constructivism, ontologically, this thesis assumes that there are multiple realities (BMs), which are context-based, vary for each company and might change over time (Eriksson and Kovalainen, 2016). Relatedly, it assumes that knowledge is socially constructed (epistemology) through interactions between the researcher and informants, and it seeks to understand the concept of BM based on informants' perceptions of them. Thus, BMs are portrayed based on the narrations that informants, as active agents in shaping meanings (Weick, 1993), used to describe their BMs during the interviews. Given sustainability as a holistic and broad concept, articles 1 and 2 used the concept to address the balance among the elements of Triple Bottom Line, whereas article 3 addresses the long-term aspect of sustainability in terms of resilience and a sustainable competitive advantage. Notably, this thesis seeks to address sustainable tourism at the firm level and, more specifically, from the perspective of BMs and business practices. Hence, I do not position myself as a tourism researcher since I carried out my research mainly based on theories related to the business and management discipline. Nonetheless, I have always sought to review the literature on tourism contingencies with reference to BMs, BMIs, SBMs, sustainability drivers, and DCs, in addition to these research streams in the business literature. This means that I adopted and

treated nature tourism as the empirical setting and context to explore BM changes for sustainability (the phenomenon) and their underlying critical factors and practices.

3.2. Theory development approach

Drawing on constructivism, this thesis extends and refines existing theories by generating theories from the data, not by testing extant theories. For this purpose, the constructivist grounded theory (GT) research design is followed (Charmaz, 2014). GT as Charmaz defines it, “begins with inductive data, invokes integrative strategies of going back and forth between data and analysis, uses comparative methods, and keeps you interacting and involved with your data and emerging analysis” (p.1). The early version of GT research relied on a positivistic stance. Later, in the 1990s, researchers were increasingly inclined to apply GT more subjectively, assuming that there are multiple social realities, and a researcher has an inherent role within these realities rather than an independent observer (Charmaz, 2000; Bryant, 2002; Clarke, 2003). This subjective constructivism adopts strategies such as theoretical sampling, coding, memo writing and theory development; strives to embrace an inductive and iterative approach and emphasizes the researcher’s reflexivity, given that a theory is constructed through the interactions between researchers and their informants (Charmaz, 2014; Matteucci and Gnoth, 2017). Reflexivity acknowledges that the researcher’s preconceptions and prior knowledge influence how data are interpreted and what is developed as theories (Charmaz, 2014). Following this chapter, I will reflect on my part in my studies, especially with reference to the interviews and data analysis.

Moreover, GT is about going back and forth abductively between data and theory rather than being driven by theory (deduction) (Charmaz, 2011; Clarke, 2019). Clarke et al. (2018) refer to abduction in GT as looking for conceptual clues in the data to shed theoretical light on that data. Such an abductive approach is flexible and, therefore, has been practiced by many qualitative researchers with various research philosophies, mostly because pursuing pure induction is very difficult (Saunders et al., 2019). Hence, I applied abduction by constantly moving back and forth between data analysis and extant theories. This approach guided my research when I reviewed the literature before starting my fieldwork to develop an interview guide and grasp an understanding of the phenomenon that I intended to study. Simultaneously, I practiced remaining open-minded toward emerging theoretical clues during data analysis and not imposing new theories within the frame of extant ones. Thus, a more thorough literature review was conducted in parallel with data collection and analysis. The overall approach of this thesis aligns with constructivist GT, although articles 2 and 3 basically follow established strategies for such study design, as they adopt a more subjective approach (relying on primary and then

secondary data) than article 1 (based on secondary data). The GT approach was developed gradually throughout my PhD journey; while article 2 partially informs GT, article 3 illustrates this design more clearly.

Table 8: Overview of the research design of the appended articles

	Article 1	Article 2	Article 3
Title	Business models and sustainability in nature tourism: a systematic review of the literature.	Driving business models toward sustainability in Arctic nature tourism.	A dynamic capabilities approach to business model innovation in times of crisis.
Sub-research question	How is the BM concept used and operationalized within scientific articles about nature tourism? To what extent and how do these articles include and discuss sustainability?	How are BMs driven toward sustainability in Arctic nature tourism?	How do entrepreneurs change the BMs via DCs in order to tackle the crisis?
Research objective	Explores the literature about BMs in the nature tourism context with regard to related sustainability aspects.	Analyzes the BMs in Arctic nature tourism to indicate how they are moved toward incorporating sustainability.	Investigates the BMs in Arctic nature tourism based on the entrepreneurs' perceptions to unpack how BMs are changed through DCs to tackle the pandemic.
Research design	Systematic literature review	Qualitative multiple-case study approach (five cases).	Longitudinal multiple-case study approach (seven cases).
Data source	18 articles from two scientific databases, ISI Web of Science and ProQuest.	Five semi-structured interviews.	14 semi-structured interviews, webpages, reports, press and social media.
Data analysis	In-depth content analysis through defining categories and subcategories based on two research questions.	Thematic analysis through two cycles of initial and focused coding and memo writing via NVivo.	Thematic analysis through two cycles of initial and focused coding and memo writing via NVivo.

Table 8 briefly depicts the research design of the three articles. A systematic literature review as the point of departure for my scientific journey was guided by posing two research questions regarding how the concept of BM is applied and operationalized with reference to sustainability and innovation in the nature tourism literature. The underlying assumption was that a BM, as a relevant vehicle of change, has great potential for incorporating sustainability. This study relies on scientific databases to identify previously published papers that were generated for other research purposes but can help answer the research questions (Charmaz, 2014; Saunders et al., 2019). The systematic literature review is based on a systematic content analysis of the papers' texts (secondary data) to address common themes, similarities, and dissimilarities in line with the main research purposes. Although these data are qualitative and analyzed qualitatively, compared to interviews, such documents are considered more objective (Charmaz, 2014).

In article 2, the goal was to qualitatively probe into the BMs to determine how they are driven toward the integration of sustainability. Sustainability aspects here are conceived based on how

informants perceived and made sense of such aspects in translating them into their business practices, as founders (informants) are central in the decision-making regarding BM changes (Foss and Saebi, 2017; Rauter et al., 2017). Likewise, article 3 qualitatively explores BM changes based on how entrepreneurs regarded the opportunities and threats adhering to the COVID-19 pandemic rather than an image of objective truth about the pandemic. This research strives to shed light on BM changes resulting from a firm's DCs. Articles 2 and 3 rest on constructivism GT, and aim to enhance the understanding of sustainability and changes to BMs by investigating the practices performed by the companies (Charmaz, 2014). Therefore, these articles apply a multiple-case study design to generate theory (GT methodology) and rely on informants' interpretations in making sense of their daily experiences to navigate the situations they encounter (Charmaz, 2014). To clarify the strategies that are essentially associated with the constructivist GT research design, I discuss various strategies below in Section 3.4.

3.3. Study 1: Systematic literature review

A systematic literature review is defined by Greenhalgh et al. (2004) as “a review of the literature according to an explicit, rigorous, and transparent methodology” (p. 582). The goal of a systematic literature review thus is to synthesize the relevant literature by applying a replicable and explicit process to identify related articles (Tranfield et al. 2003). It was worthwhile and extremely useful to perform a systematic literature review as my first scientific contribution at very early stages of my PhD project because it helped me gain a comprehensive overview of the usage and conceptualization of the BMs and sustainability across existing nature tourism literature. Moreover, identifying knowledge gaps and potential directions for future studies gave rise to the development of the second and third studies. The first research question (Table 8) in terms of BM conceptualization and operationalization was inspired by future research suggestions in the most recent literature review² regarding BMs in tourism (hospitality, transportation, and e-commerce) (Reinhold et al., 2017). In addition, the study by Reinhold et al. sparsely addresses sustainability aspects, SBMs and nature tourism. More importantly, nature tourism is often discussed in relation to sustainability because it relies heavily on nature, wildlife, and local communities, whose well-being also depends on tourism (Valentine, 1992; Hall and Boyd, 2005; Kuenzi, 2008; McCool and Bosak, 2016; Saarinen, 2019, 2021; Fredman and Margaryan, 2021; Sørensen and Grindsted, 2021). This gap inspired the development of the second research question.

² The most recent with regard to the publication of study in 2018 in Sustainability.

Boolean search terms were used in two scientific databases, ISI Web of Science and ProQuest, for articles from January 2000 to November 2017. The terms were “business model”, AND tourism, AND/OR sustain* (sustainability and sustainable) in the title, abstract, and keywords. The first criterion was the presence of the two terms “business model” and tourism. Quotation marks were applied to find the phrase “business model”; if not, the results could have been irrelevant by also encompassing articles with the terms “business” or “model”. A total of 249 articles were identified from these two databases according to the search terms; however, a significant number of articles were discarded due to their marginal conceptualization of the BM term, duplicate presence in both databases, lack of full text (conference proceedings) or lack of focus on nature tourism. This phase led to the identification of 18 articles that were relevant to the research objectives and could be used to conduct in-depth content analysis.

3.4. Studies 2 and 3: Case-based grounded theory research design

Drawing on both GT and case studies, articles 2 and 3 build theories that are grounded in the data and follow a multiple-case design. I argued in these two articles that my methods rest upon case studies, yet I have been also guided by the constructivist GT. The case study approach and GT have several elements in common, such as theoretical sampling, theoretical saturation, case selection, and the use of various sources of data. Later, in this chapter, I elaborate on these elements. This research design was applied to build theories based on case studies by constantly making comparisons between theory and data (an abductive approach) (Eisenhardt, 1989; Eisenhardt and Graebner, 2007). Whereas article 2 is more aligned with the case study approach by Yin (2014), article 3 is more reflective of a GT approach. Hence, I position my research as belonging to both practices (Eisenhardt, 1989; Eisenhardt and Graebner, 2007).

Commencing data collection for article 2, I noted that the research objective was to explore the drivers underlying SBM development; thus, the approach here was more inclined toward the case study approach than toward GT. Nevertheless, I carried out the coding procedure and memo writing as suggested by Charmaz (2014) to analyze the data. Unlike article 2, in article 3, all I could gather before starting the fieldwork was that because of the COVID-19 pandemic and travel bans, tourism entrepreneurs might start to improvise and modify their current value propositions to tackle the crisis and satisfy the new segments of customers who began to travel nationally. Therefore, I attempted to investigate the phenomenon of crisis management in the COVID-19 context to shed light on emerging BM changes, how such changes took place and the complexity of the consequences of the crisis for small tourism companies in the Arctic. Notably, GT is relevant when little is known about a phenomenon (Briks and Mills, 2011). Proceeding with the data analysis, the abductive approach of iterating back and forth between

the emergent clues and existing theory guided me to identify the DCs lens as a relevant theoretical framework to scrutinize the data in a new light. Therefore, the applied approach of article 3 informed the GT approach (Charmaz 2014). I should add that identification of the DCs lens and its inherent dynamic aspect later led me to return to the cases for the second interview round (Charmaz, 2014; Eriksson 2014), which is elaborated both in article 3 and this chapter.

The case study approach is relevant when posing ‘how’ or ‘why’ research questions to shed light on a complex phenomenon in a context that cannot be manipulated by researchers (Yin, 2014). Given the relevance of this approach to “analytic generalization” rather than “statistical generalization”, the findings from case studies cannot be generalized to larger populations, as case selection informs the potential contribution of each case to the theory building (Yin, 2014). A case study aims to generate concepts to generalize to the relevant theories and literature (Gioia et al., 2013). For example, in articles 2 and 3, I strived to make a contribution to the existing relevant literature by extending theories with reference to the drivers underlying SBM creation, crisis-related DCs and BMIs.

Following a qualitative research approach, two multiple-case studies (Studies 2 and 3) were conducted to address the inherent complexity related to sustainability issues (van Kerkhoff, 2014) and delineate the main differences and similarities among entrepreneurs in terms of how they tackle a crisis (Van Burg et al., 2020). I regarded the multiple-case study approach as practically relevant due to a lack of a sufficient theoretical basis for tourism BMs, BMI and the complexity of DCs and sustainability (Mezger, 2014; van Kerkhoff, 2014; Breier et al., 2021). Moreover, the objective was to unravel the emergent patterns and relationships through within- and cross-case analysis (Eisenhardt, 1989; Eisenhardt and Graebner, 2007; Yin, 2014). Such a design was preferred over a single-case study design, as both studies aimed to elicit detailed data to run a comparative analysis across BMs; thus, they demanded a careful selection of cases (purposeful theoretical sampling) with great potential to contribute to theory development (Eisenhardt, 1989; Yin, 2014). Regarding the number of cases, Miles et al. (2014) and Yin (2014) argue that a minimum of five cases is acceptable, while Eisenhardt (1989) claims that having between four and ten cases provides a well-founded “empirical grounding”.

3.4.1. The context and case selection

Study 2: Potential cases were chosen from tourism companies that had nature-based activities in their product portfolio in Finnmark, the northernmost and largest Norwegian county (even larger than Denmark) located above the Arctic Circle (from 58° to 71°) (Chen, 2015). The final selected cases were from two destinations, Alta city, and the Varanger region. In Alta, the city of northern lights (Visit Alta, 2022), several tourism operators have been established to offer

activities related to hunting the northern lights. In addition to tourism-based activities, various scientific expeditions, either nationally or internationally, have been performed during the history of this city. Moreover, Alta has very ancient rock carvings dating back to approximately 5000 B.C., and in 1985, it was inscribed on the World Heritage List (Alta Museum³) of the United Nations Educational, Scientific and Cultural Organization (UNESCO). It is described by UNESCO as “with its thousands of paintings and engravings, is an exceptional testimony of the aspects of life, the environment and the activities of hunter-gatherer societies in the Arctic in prehistoric times”⁴. The next destination that was explored was Varanger, a region located in the eastern part of Finnmark and one of the best and most accessible arctic birding destinations in the world (Amundsen, 2011). Varanger has been developed and promoted as a birding destination in recent years due to its natural potential; therefore, this activity has contributed to the economy of the local community. Before being known as a birding destination, its prior status was commented on by an informant (*Archart*) as follows “it was 2005 and things seemed pretty grim ... windows of the shops were closed and brown paper falling down and you got the feeling that things were falling apart ... there was so much obvious potential with the bird cliff Hornøya which is surrounding arctic nature...”.

In recent years, through a collaboration of local tour operators with community-based and governmental organizations, a pilot project has been launched to make and promote Alta and Varanger as sustainable destinations to obtain the Sustainable Destination⁵ Label, which was introduced by Innovation Norway in 2013 (Det Kongelige Nærings-og Fiskeridepartement, 2017). Nature is the most important reason international tourists choose Norway as their destination. The significant increase in international tourist arrivals and the necessity of a systematic collaborative mechanism among the actors, municipalities, and local communities resulted in the introduction of the Label (Det Kongelige Nærings-og Fiskeridepartement, 2017). Consequently, related projects have been launched across various destinations in Norway, including the Arctic, to obtain the Label and, simultaneously to develop sustainable tourism. This Label’s main assumption informs that “the destination takes care of nature, culture, and environment, strengthens social values”⁶. To gain an overview of the context, before case selection, I conducted prefieldwork, which is also discussed in article 2, by:

1. Arranging several meetings with two researchers at UiT as well as local organizations, such as the Origo Knowledge Park and Innovation Norway; and

³ <https://www.altamuseum.no/en/the-rock-art-of-alta>

⁴ <https://whc.unesco.org/en/list/352>

⁵ Bærekraftig Reisemål

⁶ Retrieved and translated from innovasjon norge.no

2. Exploring the online content of Arctic nature tourism to approach the existing tourism businesses through promotional materials and online profiles.

Following a purposeful theoretical sampling strategy (Eisenhardt, 1989), 42 potential tourism businesses were identified and were classified into four groups according to their online profile (how a business is promoted concerning sustainability) and prefieldworks. The groups and their summarized descriptions are shown in Figure 6. Group 1 described businesses that are most likely to hold an SBM versus Group 4, which included those that are least likely to be concerned with regarding sustainability-related issues. Group 1 involved potential cases that have already been eco-certified by Norwegian Ecotourism; they “offer nature and cultural experiences with local roots and real meetings people and nature”⁷. The companies in Group 2 could still be regarded as performing sustainably, since they referred to their sustainable performance in concrete terms in their online profiles, although they did not hold any certificates.



Figure 6: Classification of potential cases in study 2 in terms of their sustainability concerns

In addition, Group 3 included cases that did not state any specific sustainability-related concerns in their online profile. However, they could be considered for further investigations, as they provided activities mainly relying on animals, birds, and national parks. Finally, Group 4 covered the companies that were known to have no certain concerns or that did not offer activities related to animals, birds, and national parks. A total of ten potential companies that belonged to groups 1 and 2 were chosen for further consideration as contributing to sustainable tourism through designing SBMs, which reflect this article’s theoretical perspective (Miles et al., 2014; Yin, 2014). By contacting these ten companies, seven companies consented to cooperate with this research. Given reaching diversity in the emerging themes concerning the drivers underlying sustainable value creation (Glaser and Strauss, 1967), data collection was done by interviewing five companies. The case description summary is illustrated in Table 9 in

⁷ Retrieved and translated from “norsk-okoturisme.hanen.no”

terms of the name, location, growth stage, and main products of the cases, as well as the informant's background and whether the case is eco-certified.

Table 9: Descriptive features of the cases in article 2 (partially derived from Sahebalzamani (2020), p.6)

Case's name	Informant's background	Located in	Growth stage	Main products	Eco-certified
Vegex	The founder has an educational background in business from Southern Norway where he believed he was kept away from nature. Thus he started to realize the value of nature in Alta, his hometown. He returned to Alta and established his company in 2017 to primarily offer northern light safari and fill the gap in nature tourism products, which did not exist at the time in Alta. As suggested by the founder, one employee (he was working also as a tour guide) who had a key role in setting up and establishing the business took part in the interview. He had an education in Arctic nature guide from Svalbard with a focus on nature conservation.	Alta	Start-up	Northern light, fjord and whale safari, tours related to national parks and Sami culture, food and accommodation	No
Hunder	As one of the co-founders, she established the company in 2011 with her husband as a family business. Their focus is on buying organic, short-travel, and local ingredients and providing affordable offers and products for the local community during weekends in addition to the products and activities that are designed for tourists.	Alta	Business in growth	Food, accommodation, and dogsledding	Yes
Auro	The informant is the marketing manager who was a part of the strategic management team with owners whose father established the company in 1965. The company was among the first operators in Norway who started offering river boat safari and boat tours for tourists and locals when there was no bridge on the Alta River. Later, snowmobile safari, food, and accommodation were also added to their offers. Their main focus is on employing local artists and using short-travel ingredients.	Alta	Incumbent	Food, accommodation, northern light safari, snowmobile safari, ice fishing, and reindeer safari	No
Øya	As a co-founder, she has a background in journalism. She established the company in 2001 with her husband as a family business. The company was the first at this destination, which offered tourist holiday houses for birdwatchers and nature enthusiasts. In addition, she has been the project leader of a local food festival for five years. Later, they also added story-telling trips and guided tours in nature.	Varanger	Business in growth	Accommodation, and guided birdwatching and northern light tours	Yes
Archart ⁸	The entrepreneur is a bird watcher and architect. Inspired by a study trip to Vardø in 2005, he decided to move to Vardø and establish his company in 2009 by focusing on nature-based architecture, promoting the region as a birding destination, and encouraging community engagement.	Varanger	Business in growth	Nature-based architecture (bird hides and wind shelters), and providing online content	No

Study 3: Due to the COVID-19 pandemic and the resulting worldwide crisis, I decided to design article 3 to address the great complexity that tourism entrepreneurs had to tackle because of the pandemic, as Arctic tourism was halted in the middle of March 2020. Drawing a survey that

⁸ The Alpha informant is study 3.

was conducted among Norwegian tourism companies by the Norwegian Hospitality Association (NHO)⁹, it has been concluded that the Norwegian tourism industry has been affected by the pandemic very severely (NHO Reiseliv, 2020). The NHO concludes that the total number of companies planning resignations has increased despite the gradual reopening of the community. More than half of the tourism companies began to customize their offers for Norwegian tourists for summer; 25% confirmed that they were operating as before, 55% were open with fewer employees, and 20% remained closed¹⁰. “If you are going to use the Norwegian market to compensate for foreign tourists, then it is a joke when it comes to Northern Norway”¹¹ (CEO of one tourism company in the Arctic). Therefore, Arctic tourism’s reliance on the arrival of international tourists who are mainly interested in the winter season put Arctic tourism at a high risk of even a more severe recession compared to other industries. Based on the survey by NHO, some of these tourism companies partially were operating whereas either temporarily or even permanently, many were closed. The former companies were expected as likely to begin revising their strategies and thus BMs.

Arctic regions are regarded as highly vulnerable to global crises because of their dependence on international guests (Seeler et al., 2021). Given the “fragile nature and increasing vulnerability of the Arctic region, where tourism is highly dependent on nature” (Lee et al., 2017; p. 3), the chosen potential cases were the companies that provide nature-based experiences in Arctic Norway. They were verified members by Visit Tromsø, Visit Andenes, Visit Varanger and Visit Lyngen Fjord, and promoted online as committed to sustainable and responsible tourism. These destination management organizations have been certified as sustainable destinations or as carrying out related projects to obtain such certification. The case selection primarily relied on the prefieldwork I have conducted such as:

1. Participating in a tourism workshop (Arctic Frontier) before the COVID-19 crisis hit;
2. Arranging meetings with two researchers who had relevant experience with the context;
3. Having one meeting with Tromsø municipality to discuss the related programs and plans for supporting and reviving the tourism industry during the crisis;
4. Exploring the most recent news issued by the local press, NHO, and regional destination management organizations; and
5. Exploring the content of potential case web pages.

⁹ NHO is a tourism expert organization for the Norwegian tourism industry and has more than 3300 members.

¹⁰ <https://www.nhoreiseliv.no/vi-mener/koronavirus/nyhet/2020/4-av-10-reiselivsbedrifter-planlegger-oppsigelser/>

¹¹ <https://www.nhoreiseliv.no/vi-mener/koronavirus/nyhet/2020/alle-tror-reiselivet-har-fatt-massevis-av-penger/>

In addition, the selection relied on the co-authors' familiarity with Arctic nature tourism and published news in the press and the NHO. A total of seven companies agreed to contribute to this research and, therefore, were selected to compare the entrepreneurs deemed to be actively adjusting their BMs. The chosen cases had some elements in common such as:

1. They were active during summer of 2020 as they had active products and/or new crisis-related terms and conditions, and COVID-19 measurements; and
2. Based on my knowledge, they survived at least the first year of the crisis and were hence moving toward sustainability.

Thus, I concluded that they are in the process of building resilience and dynamically making changes to their BMs. Hall (2009) argues that “sustainable firms should be understood in terms of survivability and profit, as clearly they are not sustainable if they cease to exist” (p.296). The case description summary is illustrated in Table 10 in terms of the case's name, location, growth stage, main products, the informant's background, and various sources of data.

Table 10: Descriptive features of the cases in article 3 (derived from Sahebalzamani et al. (2022), p.7)

Case's name	Entrepreneur/informant's background	Growth stage	Located in	Main products	Source of data
Alpha	Inspired by a study trip in 2005, he decided to move to Vardø and establish his company. He founded the company in 2009 by focusing on nature-based architecture, promoting the region as a birding destination, and community engagement. He has been a bird watcher and architect and established a new company in 2020, especially for tourism-related operations.	Business growth/Start-up	Vardø	Nature-guided tours, travel packages, digital birding tours, Nature-based architecture	Two interviews, press, and social media
Beta	The founder has an international background and established the company in 2015 to buy used vans, converted them to camper vans, and rented them out to nature lovers who wish to drive carbon-neutral. The company contributes to an African solar power project by providing electricity and jobs for the nearby society.	Business in growth	Tromsø	Camper rentals	Two interviews, three web pages, blogs, and social media
Gamma	Two local entrepreneurs who were raised in Skjervøy and are highly interested in nature and animals established the company in 2019 to offer nature-based activities. One of the co-founders was interviewed.	Start-up	Skjervøy	Whale and wildlife safari, cruise trips, hiking tours	Two interviews
Delta	A team who was enthusiastic about the outdoors established the company in 2015. Their focus was on an effort to market the destination and promote the Lyngen region. One of the co-founders was interviewed.	Business in growth	Lyngen	Accommodation, snowmobile, northern light whale safari, distillery tours	Two interviews

Case's name	Entrepreneur/informant's background	Growth stage	Located in	Main products	Source of data
Epsilon	The founder has an international background and established his company in 2016 in Tromsø as a travel operator focused on maritime activities. Later on, he expanded the business to become a destination management company and concentrated on generating climate reports to become carbon neutral and inspire guests throughout their tours.	Business in growth	Tromsø	Hiking, sightseeing, fishing, and sailing tours, northern light and whale safari, event arrangement	Two interviews, webpage, social media and press
Zeta	The entrepreneur is one of the co-founders. She has an international background and together with two friends established a small start-up in 2015 with one vehicle from their homes to offer nature-based products in fragile wilderness.	Business in growth	Tromsø	Travel packages, northern light safari, ice fishing, nature hike tours, equipment rentals	Two interviews, webpage, and social media
Eta	As a family business, the company was established in 1989 by two scientists to offer whale watching. Later, the entrepreneur's family bought the shares (75%) and a boat to make it suitable for whale safari instead of whaling. The informant is one of the board members and has been working as the captain on board since he was a teenager. The company strives to commit to the well-being of the whales by developing internal guidelines and environmentally friendly practices.	Incumbent	Andøya	Whale safari, restaurant, accommodation, museum tours	Two interviews, internal reports, webpage, and social media

Throughout the summer of 2020, several campaigns were promoted nationally such as “Norwegian Holiday” and “Buy Local”¹², to encourage Norwegians to spend their holidays traveling nationally and purchase goods from the local market. Norwegians usually spend their summers abroad in warmer areas. Due to travel bans associated with the pandemic, however, summer 2020, many Norwegians began to travel domestically. To satisfy these Norwegian guests, whose needs are quite different from those of international guests, tourism businesses had to deal with new challenges, since existing offers were unsuitable and of little interest to the new segment of domestic tourists. However, the informants underscore the international market importance and Arctic tourism's great dependence on that. In the new situation, they decided to implement changes in the offers according to their description of Norwegian guests as “athletic” (*Delta* and *Zeta*) and “independent” people (*Gamma*) who are used to “buy [ing] luxury” (*Beta*) and simultaneously “appreciate the logistics” attached to the products (*Epsilon*).

3.4.2. Grounded theory interviews

Interviews play an important role in GT, they are the main tool for data collection; they can contribute to building rich data, which sets the stage for the development of strong theories (Charmaz, 2014). Interviews were the main source of primary data in articles 2 and 3, although

¹² Norgesferie og Handle lokalt

I also collected secondary data in article 3 to supplement the interview data. My focus was to conduct interviews with informants who were understood as being highly knowledgeable with regard to the research objectives (Eisenhardt and Graebner, 2007). In addition, the process of managing small tourism companies, as claimed by Sampaio et al. (2012), is greatly personalized and informs the founder's/manager's skills, experiences, and decision-making. For each article, an interview guide was prepared based on the theoretical perspective before starting the fieldwork, and the questions were designed to be open-ended and modified several times during the interview process to obtain richer narratives. This was akin to GT methodology, which is known to be flexible in terms of reshaping the interview guide to enhance the researcher's knowledge of the topic of interest. Relatedly, Gioia et al. (2013) strongly advocated changing the interview questions in GT research as the data analysis proceeds. Besides, Charmaz and Belgrave (2012) claim that reformulating the questions is also in line with theoretical sampling, which led me to pose more focused and relevant questions in later interviews than in earlier ones. Hence, the interviews, especially the earliest ones, were held at least a few days apart to allow time to transcribe the interviews, contemplate the interview guide, and reformulate the questions as needed. Interview transcription and initial data analysis (open coding) were generated and performed simultaneously with data collection.

To collect the data for article 2, semistructured interviews were conducted in-person during the summer and fall of 2018 at companies' offices with the relevant knowledgeable informants (four founders/CEOs, one marketing manager and one tour guide who were heading up the BM design processes). My aim was to conduct interviews mainly with company founders, as they are seen as the key individuals responsible for designing BMs and setting strategies and goals in terms of sustainability orientation. However, in two cases, other informants recommended by the founders were also included. For example, when I contacted the founder/CEO of the case Auro and presented the research aim, it was recommended that I contact the marketing manager, as he was well informed about the case's BM. In the case Vegex, the founder suggested inviting the tour guide into our conversation, as they were working as a team to set up the BM. Given that the case was in a start-up phase in 2018, it made sense to include him at the founder's suggestion. Five interviews, which each lasted between 1 and 2 hours, were arranged based on an interview guide (Appendix 1) that relied on the theoretical framework entailing the SBM guiding principles (Breuer et al., 2018), "external and internal stimuli" (Zollo et al., 2013), and measures related to the Standard for Sustainable Destinations (Innovation Norway, 2017). Notably, during the company visit, I considered collecting secondary data sources other than interviews; therefore, I probed into whether the companies had any internal measurements, reports, and documents related to their sustainability performance and eco-certification.

However, none had a written document for this purpose. This weakness in terms of the lack of secondary data is stressed as a research limitation in Chapter 5. However, the promotional materials that I gathered during prefieldwork assisted me in performing case selection.

For article 3, the main source of data was again semistructured interviews with the owners/founders of companies who were key persons responsible for adapting and designing new BMs. They were known as “knowledgeable agents” who was experiencing a phenomenon (Gioia et al., 2013). Interviews are a reliable tool to collect rich data, especially when a study grapples with an extraordinary phenomenon (Eisenhardt and Graebner, 2007) such as the COVID-19 pandemic. Secondary data were also collected to support and validate the interviews (triangulation). This study relies on the data collected at two stages during the crisis, eight months apart for two reasons: travel restrictions had been continued, and to address the dynamic aspect of DCs following Eriksson (2014) who highlights the importance of time in addressing changes related to DCs. The first round of interviews occurred immediately after the first reopening of the tourism sector in the summer of 2020, and seven interviews were performed online via Zoom across three months: July, August and September. Each interview lasted between 1 and 1.5 hours and was based on an interview guide (Appendix 1). Each informant took part in two interviews, and a total of 14 interviews were conducted. The second round of interviews was carried out with a more informal, open style than the first round and occurred in February, March, and April 2021 and lasted 30 minutes on average. By performing this task, I aimed to saturate the categories and themes that resulted from the first interview round (Charmaz, 2014; Matteucci and Gnoth, 2017). The interview guide for the second round was mainly inspired by the result of the first round and the companies’ recent social media posts.

3.4.3. Grounded theory data analysis

The conducted interviews were recorded and then transcribed before data analysis began. A thematic analysis approach (Braun and Clarke 2006) was applied, as the aim was to identify systematically relevant patterns and themes across data to set the scene for conducting further data analysis, answering the research questions and generating theory (Charmaz, 2014; Saunders et al., 2019). For this purpose, the thematic analysis procedures were launched by coding the interview manuscripts (transcriptions). I used NVivo12 software to categorize and assign relevant codes to the data as I wrote and stored the memos (Charmaz, 2014; Yin, 2014), as will be discussed below. Transcriptions were put through two phases of coding: initial open (first cycle) and focused (second cycle) coding. The initial open coding enabled within-case analysis (Eisenhardt, 1989), and was deemed primarily provisional and comparative in regard to providing the key analytic directions (Charmaz, 2014). This way of coding created “a

language for talking about the data” through interpretive labels (Corbin and Strauss 2008, p.160). The initial open labeling was basically inductive, as emerged during a review of the texts in which I was inspired and guided by the research questions, interview guide, and/or literature (Eisenhardt, 1989; Zhang and Wildemuth, 2005). Given relevance, 120 open codes were generated for study 2 and 328 were generated for study 3. Additionally, these open codes were essentially data-driven, as they either emerged and were derived inductively or quoted (InVivo codes) as directly stated by the interviewees.

Next, to perform the second coding cycle, I followed the coding strategy of focused coding to enable cross-case comparisons by distilling key categories, patterns and themes reflecting the theoretical perspective (Charmaz, 2014). During focused coding, I needed to make decisions about the open codes that analytically make the best sense with reference to the research questions and existing theories. Therefore, a theory-driven approach was followed by in coding procedure to condense the raw qualitative data (Saunders et al., 2019). To build the theories, it was crucial to closely compare the emergent themes with prior theories (Eisenhardt, 1989). By doing so, subcategories were deducted and revised, while some were also removed due to irrelevance to generating focused codes, including both parent and child subcodes, which either were built together with parent codes or originated from the first cycle of coding (open codes). During the second cycle coding for study 2, the emerging themes related to internal and external drivers underlying sustainable value creation resulted in 12 focused codes (from a total of 20 focused codes), whereas in study 3, 24 focused codes were generated and 14 codes out of them were regarded relevant to address BM changes, DCs and practices. In addition to two cycles of coding in study 3, focused codes were investigated with respect to the DCs framework (Teece, 2007): sensing opportunities and threats, seizing opportunities, and BM changes.

Similarly, given the GT data analysis, Gioia et al. (2013) suggested a three-stage analysis in which 1st-order and 2nd-order themes correspond to open and focused coding procedures. The 2nd-order themes were further merged and clustered into a few aggregate categories. The 1st-order and 2nd-order themes, as well as the aggregate categories, provide the basis for a data structure (Gioia et al., 2013). The data structure of studies 2 and 3 was built based on the first- and second-order themes as well as the aggregate categories (internal and external drivers in study 2 and resource-, market- and technology-oriented practices in study 3) and presented in Appendix 2. In addition to conducting the coding, I developed several memos for both articles 2 and 3, as I coded the data (open and focused). The practice of memo writing assisted me in free-style writing that captured my first impressions of the codes and categories and reflecting on conceptual categories based on the emergent themes among the codes, whether across or

within the cases (Charmaz and Belgrave, 2012). Additionally, memo writing was a good exercise for helping me meet the requirement of theoretical sampling (Charmaz, 2014) by recognizing gaps in data, which prompted me to return to previous informants (article 3) to collect additional data, revise codes, and reformulate the research questions. Relatedly, Charmaz (2014) suggests creating a memo bank not only to identify the gaps but also to become confident and innovative in conducting further data analysis.

3.5. Methodological considerations

3.5.1. Reflexivity

During data collection and analysis, even though I admit that I could not live the informants' experience myself, I sought to see the phenomenon I studied through their eyes and reflect their perceptions and narrations as accurately as possible. Given the nature of primary data, I acknowledge my subjectivity and consider my role decisive in constructing the primary data, that is the interview transcriptions. In contrast, I did not have any influence on the generation of secondary data, which I collected for article 3 as a supplement to the primary data and for article 1 as the main source of data. Both ways point to an objective perspective. Maxwell (2013) advocates that reflexivity is not about striving to minimize the researcher's influence; rather, it admits the inevitable influence of the researcher in qualitative research, especially how the interviewees' statements are influenced by the researcher during interviews

Charmaz (2014) also contends that qualitative research is affected by the researcher who conducts it, meaning that what the informants shared during interviews was highly influenced by how I personally conducted the interviews and posed the questions. The way I engaged the informants during the interviews affected the data and resulted in the generation of more detailed narratives. For instance, I attempted to show my interest in my informants by having a "conversation" to explore the topic and not merely conduct an "investigation". To convey that I am a good listener and that the information my informants shared was valuable to my studies, I strived to validate their answers by posing follow-up questions and repeating in my own words what I had heard to ensure that I understood their meaning correctly and to motivate them to explain the topic in more detail through various examples.

With respect to data analysis, I believe that my background and prior education in engineering and business administration encouraged me to conduct the analysis in a structured way and follow GT strategies, such as performing several rounds of coding, using of NVivo, and memo-writing even very early in my PhD journey when I did not have the knowledge that I have now. Furthermore, the themes, concepts, and categories that emerged during the analysis explain the

extent of the insight I had into a particular field and were substantially influenced by my skills and knowledge in discerning what made the most sense theoretically.

Notably, when I selected the cases for study 2, I was just at the beginning of my PhD journey. Thus, my early impression from the literature review and informal conversations during the prefieldwork led me to assume that eco-certified companies might hold the strongest sustainability concerns. However, the result of data analysis did not significantly support this assumption that a certificate can significantly drive SBM development.

3.5.2. Research quality measurements

To assess the quality of qualitative research, several criteria must be examined: credibility, transferability, and dependability (Lincoln and Guba, 1985; Bryman and Bell, 2007; Yin, 2014). The validity of qualitative research is explained through its credibility and transferability, which, as Maxwell (2013) asserts, “refer to the correctness or credibility of a description, conclusion, explanation, interpretation, or other sort of account” (p. 122). Some tactics used to ensure the validity of my research are discussed here. For article 1, conducting a systematic literature review, as Tranfield et al. (2003) suggest, enhances internal validity by minimizing the biases related to subjectivity and enables replication (reliability) by following the described procedures. In article 1, the procedure for choosing the papers for analysis is explained transparently and comprehensively. It should be noted that there is always a possibility of some errors in the selection of papers, although the paper selection procedure was reviewed twice. It should also be acknowledged that the results could have been different if other search terms or scientific databases (rather than ISI Web of Science and ProQuest) were used.

Like internal validity, credibility (Bryman and Bell, 2007) relies on the accuracy of the researcher’s interpretations of the informants’ views and the extent to which the findings provide a plausible and trustworthy picture of the data. To judge the trustworthiness of the interpretations made by the researcher, credibility is referred to as “communicative validity” by Kvale (1989,1996). Kvale (1994) addresses communicative validity with respect to communications between a researcher and the informants as well as her audience and among the audiences who read and discuss the research. Relatedly, Carspecken (1996) suggests a new criterion for validity, “communicative interaction”, which explains a consensus between the written report by the researcher and the audience or readers. Based on Kvale (1994), Lankshear and Knobel (2004) propose three strategies to address communicative validity: the application of multiple data sources (triangulation), respondent validation, and evaluations by experts. Triangulation (Sounder et al., 2019) and respondent validation (Bryman and Bell, 2007; Maxwell, 2013) are also recommended to improve the credibility of qualitative research. The

latter is referred to by Yin (2014) as “construct validity” in the case study approach. For this purpose, each interview was conducted and transcribed, and then the informants were contacted and asked to review the transcriptions to provide further feedback. In article 3, before the second interview round, the informants were provided with a short-written report in which I discussed and interpreted the findings from the first interview rounds. This task pursued two objectives, reminding the informants of the topics and discussions in the first interview round and encouraging them to reflect on my interpretations in the second interview round. Additionally, in article 3, when analyzing the primary data, secondary data were also collected to enable triangulation through evidence convergence (Yin, 2014). Finally, the drafts of articles 2 and 3 were presented at international conferences and seminars arranged by the Nordic Research School in Innovation and Entrepreneurship (NORSI) and Research on Entrepreneurship, Innovation and Sustainability (REIS research group) at the UiT School of Business and Economics. The articles were also submitted to scientific journals, and their findings were assessed by going through several rounds of double-blinded reviews.

With regard to transferability (Bryman and Bell, 2007), known as external validity, a theoretical sampling logic led the case selection, which enabled analytic generalization by addressing contrasting findings via cross-case analysis. Qualitative research is based on constructed meanings and interpretations; thus, my intention was not to replicate (Sounder et al., 2019), and unlike quantitative studies that rely on statistical generalizations, qualitative studies are characterized by applying the findings to other similar settings (Yin, 2014) and show the readers the similarities between the research and other studies (Eriksson and Kovalainen, 2016). Similar to transferability, Charmaz (2014) stresses “usefulness” as a criterion for assessing the value of a GT study based on its contribution to both theory and practice and whether it embarks on further research. To do so, I strived to discuss the theoretical contributions of my studies, which aim to extend and enrich existing theories in relevant pieces of literature. In addition, I clarified the practical implications of my studies and provided suggestions for future studies to extend the current state of knowledge. It should be noted that due to the low number of cases included in articles 2 and 3, all of which were basically small nature tourism companies in the Arctic, the findings herein might not be applicable to larger organizations or settings other than tourism. Therefore, both in the articles and Chapter 5, this is mentioned as a research limitation.

Dependability or reliability (Bryman and Bell, 2007) ensures that the same results can be achieved through the replication of the described research procedures by another researcher. Yin (2014) notes that the documentation of a protocol and a database for a case study enhance a study’s reliability. Following the outline of a case study protocol, I carried out several tasks

for both empirical studies. Before the fieldwork, tentative theoretical frameworks, research questions and interview guides were developed based on existing theories and pre-fieldwork involvement with potential cases by reviewing news and online content when holding meetings with experts who had practical and valuable insights regarding Arctic nature tourism. Moreover, the informants received several emails: the first email invited them to participate in the study and introduced the researcher, the research objectives and the reasoning for selecting them to encourage their participation. Following their agreement to be interviewed, a second email was sent to highlight the main topics of conversation and suggested interview dates and times.

In parallel, practical information was stored and updated daily in separate Excel files consisting of each case's participant name, BM description with respect to the Triple Bottom Line, company location, dates of contact (both calls and emails), and interview date as well as whether the interview was ultimately conducted. Keeping this information served as a diary of field notes for me to efficiently navigate the data collection phase. In addition, a database was generated for each study and updated regularly (Yin, 2014). I built the databases with NVivo software to store the transcriptions, a large set of codes derived from several rounds of coding, and numerous memos reflecting on my preliminary inferences about emergent themes and relationships among the concepts and codes. Last, prior to the data collection and preparing the case study report (Yin, 2014), I noted some initial thoughts about potential audiences and publication channels for my research by exploring relevant special calls for contributions.

3.5.3. Ethical considerations

At every stage during my PhD journey, I strived to be mindful of the ethical aspects of my work. Prior to entering the field for data collection in both 2018 (article 2) and 2020 (article 3), I submitted an application reporting my studies to Norwegian Centre for Research Data (NSD) because I was processing personal data associated with the companies that were included in my research. To obtain the approval of the NSD, I had to explain how I would process the interview data as personal data to address the matter of confidentiality and how I would invite potential informants to participate in my research, including asking for their consent. For this purpose, I promised that I would anonymize the interview data to ensure confidentiality by using pseudonyms for the names of the companies. I also noted that the interview data (both voice recordings and transcriptions) would be accessible only to me and through my office PC, and such data would be deleted from my computer as soon as it was analyzed, and the resulting article was developed and published.

4. Summary of articles

The following chapter briefly summarizes the three appended articles in terms of theoretical backgrounds, main findings, and contributions to the literature by answering the overarching research question: What are the key drivers and DCs underlying BM change for sustainability, and how do they give rise to BM changes for sustainability?

4.1. Article 1: Business Models and Sustainability in Nature Tourism: A Systematic Review of the Literature

This article is based on a systematic literature review about BMs in the nature tourism context with regard to sustainability aspects. By adopting some of the results of the literature review by Reinhold et al. (2017) about BMs in tourism, this research explores the operationalization of the concept of BM in nature tourism in terms of sustainability principles and innovation. This paper contributes to the literature on BMfS in nature tourism. According to Reinhold et al. (2017), only a few studies have addressed sustainability in nature tourism; hence, the current research strives to address this gap, which is problematic due to the dependence of nature tourism on the natural environment and vulnerable rural peripheral areas (Priskin, 2001). This article poses two research questions: How is the BM concept used and operationalized within scientific articles about nature tourism? How and, to what extent do these articles include and discuss sustainability?

By drawing on two scientific databases, ISI Web of Science and ProQuest, 18 articles were regarded as relevant for in-depth content analysis and explored in terms of sustainability-related aspects and innovations for sustainability (Hjalager, 2010). The results show that tourism scholars have recently been interested to apply the concept of BM in nature tourism; however, the literature regarding BMfS is quite scarce (Coles et al., 2017; Reinhold et al., 2017). Some of the main findings and recognized knowledge gaps, which provide useful insights for two articles 2 and 3, are as follows:

1. There is a lack of interest in and a debate among publication channels on tourism BMs.
2. Across nature tourism, the concept of BM is applied and defined in relatively limited ways, and most articles adopt the concept of BM without a clear definition and based on their own narratives.
3. Despite the high relevance of sustainability principles in nature tourism, only eight out of 18 articles discuss BMs in terms of sustainability.
4. The investigated studies mostly adopt a static approach with respect to BMs.

5. The literature on BM change for sustainability and its underlying antecedents remained scant, and, innovations for sustainability have not been very broadly investigated.

4.2. Article 2: Driving business models toward sustainability in Arctic nature tourism

By embedding sustainability principles into the concept of BM, this research strives to shed light on how BMs are moved toward sustainability. For this purpose, a qualitative multiple-case approach is followed to scrutinize five tourism companies providing nature-based experiences in the Arctic. Moreover, SBM Principles were adopted (Breuer et al., 2018) as the research theoretical framework to conduct the research and answer the following question: how are BMs driven toward sustainability in Arctic nature tourism? A deep analysis of the drivers of SBM development extends the previous way of sorting drivers into internal and external to a consideration of how the drivers can contribute to creating an SBM. To collect the data, semistructured interviews were conducted with the founders/CEOs of five tourism companies at two destinations in the Arctic.

The data analysis proposes four internal drivers: “founder”, “organizational culture”, “internal resource”, and “certificate”. The analysis shows that a potential driver requires the founder’s cognition to stimulate the development of an SBM and the creation of sustainable value. Despite the initial assumption stating that eco-certified companies may be more likely to develop SBMs, the findings reveal that holding an eco-certificate does not necessarily result in a driver for integrating sustainability into BMs. In addition to internal drivers, six external drivers are identified: “tourist”, “actors-stakeholders”, “external resources”, “state and regulation”, “challenges and issues”, and “market incentives”. The findings also show how each driver can give rise to four SBM principles, “sustainability orientation”, “extended value creation”, “systematic thinking” and “stakeholder integration” (Breuer et al., 2018). The findings also suggest that some drivers are preliminarily related to BMs that incorporate stronger sustainability-related concerns; therefore, such cases are driven to integrate sustainability differently. These BMs with relatively stronger concerns follow a proactive approach, while the BMs with weaker concerns about sustainability mostly react to external pressures.

4.3. Article 3: A dynamic capabilities approach to business model innovation in times of crisis

This qualitative study examines how tourism entrepreneurs change their BMs by applying the firm's DCs to tackle the COVID-19 crisis and thereby build resilience. Drawing on the DCs lens (Teece et al., 1997; Teece, 2007; Leih et al., 2015), this research poses the following research question: how do entrepreneurs change the BMs via DCs in order to tackle the crisis? As the main source of data, semistructured interviews were performed with the founders, CEOs, or board members of seven tourism companies at two stages during the COVID-19 crisis (autumn 2020 and spring 2021) to address the temporal aspect of DCs and BM changes (Eriksson, 2014). This research design enables addressing the learning as well as dynamic elements of DCs through which resilient BMs are created.

The findings illustrate that tourism entrepreneurs addressed the COVID-19 crisis by making changes to their BMs through building relevant DCs. Accordingly, BM changes are classified into two groups, BMAs, which emerge through the incremental change and modification of the present value creation and BMIs through the invention of a new value proposition and thereby lead to a new mechanism of value creation, delivery, and capture. Moreover, 12 DC-based entrepreneurial practices, which set the stage for BM changes in the face of the crisis, are recognized and grouped into the resource-, market-, and technology-related practices. Resource-related practices include five practices: resource transformation, building slack financial resources, new human resource (HR) practice development, development of more efficient ways of doing business, and using and managing knowledge. Given market-related practices, four practices are identified: market trend recognition, building community embeddedness, creating new partnerships, and customer retention. Finally, technology-related practices are characterized through three practices: creating new booking systems, making use of digital communication, and developing new apps and web solutions. Thus, this study proposes a taxonomy of practices that underpin DCs (adaptive, innovative, or adaptive-innovative) and explains how the operationalization of DCs informs BM changes. Therefore, this research makes a theoretical contribution to the literature on BMI and DCs in tourism crisis management by enriching the DCs perspective (Mezger, 2014; Inigo et al., 2017; Schilke et al., 2018; Kump et al., 2019; Mansour et al., 2019; Jiang et al., 2021b).

Table 11: Overview of the main findings of the articles in terms of their contribution to answer the overarching research question

Article	Objective of the study	Type of study	Contribution to answering the overarching research question
1	To synthesize and analyze the nature tourism literature to shed light on the conceptualization as well as the operationalization of the BMs and the extent to which they are discussed in terms of sustainability principles and innovation.	Systematic literature review	<ul style="list-style-type: none"> • A clear conceptualization of BMs is overlooked. • Despite the importance, sustainability principles have been discussed only by a few studies in a limited way in relation to BMs in nature tourism, and sustainable innovations are also not investigated broadly and profoundly • Due to the adoption of the BM concept from a static approach rather than a dynamic one, a sufficient understanding of BM change for sustainability and its underlying antecedents is still missing across the nature tourism literature.
2	To analyze empirically the existing BMs in Arctic nature tourism to reveal the drivers underlying BM transformations for sustainability	Qualitative multiple-case study	<ul style="list-style-type: none"> • The existing BMs in nature tourism are transformed toward incorporating sustainability differently through four internal, and six external drivers. • Any potential driver demands the founder's cognition to create a sustainable value and incorporate sustainability into the BM. • Drivers underlying BMfS inform the company's approach in tackling the sustainability issues either proactively or reactively and set the scene differently for SBM principles (sustainability orientation, extended value creation, systematic thinking, and stakeholder integration) based on how they can meet these principles. • The more a driver is able to meet SBM principles, the more crucial it is.
3	To examine the BMs in Arctic nature tourism in the face of the COVID-19 crisis from the entrepreneurs' perspective on adopting and establishing firm's DCs to change the BMs and enhance their resilience.	Longitudinal qualitative multiple-case study	<ul style="list-style-type: none"> • Tourism entrepreneurs addressed the COVID-19 crisis by making changes to their BMs through building relevant DCs. • 12 DC-based entrepreneurial practices are identified and characterized through three main categories of resource-(five), market-(four), and technology-related (three) practices. • The recognized BM changes are categorized also into adjustments as well as innovations and rely on the nature of DCs either adaptive or innovative. • Drawing on the temporal aspect of DCs and BM changes, BMAs were more prevalent than BMIs when the crisis hit, while innovation has become dominant as the crisis has progressed. • Among the identified practices, five practices that underlie innovative capabilities give rise to BMI rather than BMAs, while four practices mostly set the stage for BMAs rather than BMI (adaptive capabilities). Three practices, which stem from adaptive-innovative capabilities can result in both BMAs and BMIs. • Companies, which succeed in cultivating innovative capabilities even on a low scale, can change their BMs innovatively regardless of how many practices are implemented.

5. Discussion and conclusions

Drawing on the findings of the three articles as shown in Table 11, in this chapter, I synthesize and discuss the overall findings in relation to the research question. Further elaborations are also addressed. Then, I reflect upon the theoretical contributions of this thesis. This chapter concludes with a discussion of the research limitations, suggestions for future research and implications for practice.

This thesis views BMs as dynamic tools that can be applied to incorporate change at the company-level and understands the interrelated concepts of sustainability and resilience as learning and dynamic processes (Ortiz-de-Mandojana and Bansal, 2016) rather than as end goals. Therefore, instead of applying “SBM”, which might correspond to a static perspective, it adopts a dynamic perspective and addresses BMs that are changing to incorporate sustainability, known as “BMfS”. Given the sustainability concept, articles 1 and 2 apply this concept with a focus on environmental and social aspects in addition to economic aspects. Additionally, article 3 addresses it in terms of a long-term approach in which resilience is a prerequisite for corporate sustainability through sustainable competitive advantage and the ability to adapt to and mitigate risks of exogenous shocks (Hall, 2009; Winnard et al., 2014; Ortiz-de-Mandojana and Bansal, 2016; Hall et al., 2017; Lacey et al., 2018; Duchek, 2020; Romagosa, 2020; Moyle et al., 2021). Being able to build a sustainable competitive advantage is a prerequisite for determining whether a BM has the potential to create sustainable value (Hall, 2009; Ortiz-de-Mandojana and Bansal, 2016; Seeler et al., 2021). Articles 2 and 3 together provide a comprehensive *empirical* overview of the sustainability concept; since sustainability is a broad concept (Ortiz-de-Mandojana and Bansal, 2016; Corrales-Estrada et al., 2021), it is necessary to examine its various aspects with relevance in two different situations: a competitive environment and a turbulent environment during a crisis.

Given the existing nature tourism BM literature, article 1 suggests that BMs are a flexible and relevant tool that can set the stage for desired transformations. With reference to BMs, the findings of article 1 further specify that sustainability principles were previously discussed by existing literature limitedly despite their high significance and relevance in nature tourism. The results of article 1 also refer to a knowledge gap in terms of a clear conceptualization of nature tourism BMs compared to management research. The broader tourism literature on BMs and BMI reveals that this particular gap is critical (Reinhold et al., 2017, 2018, 2019; Breier et al., 2021). Hence, articles 2 and 3 were designed to empirically fill this gap by offering a sufficient understanding of BM changes for sustainability through their underlying factors and practices. Figure 7 provides an illustrative overview of the main findings based on articles 2 and 3.

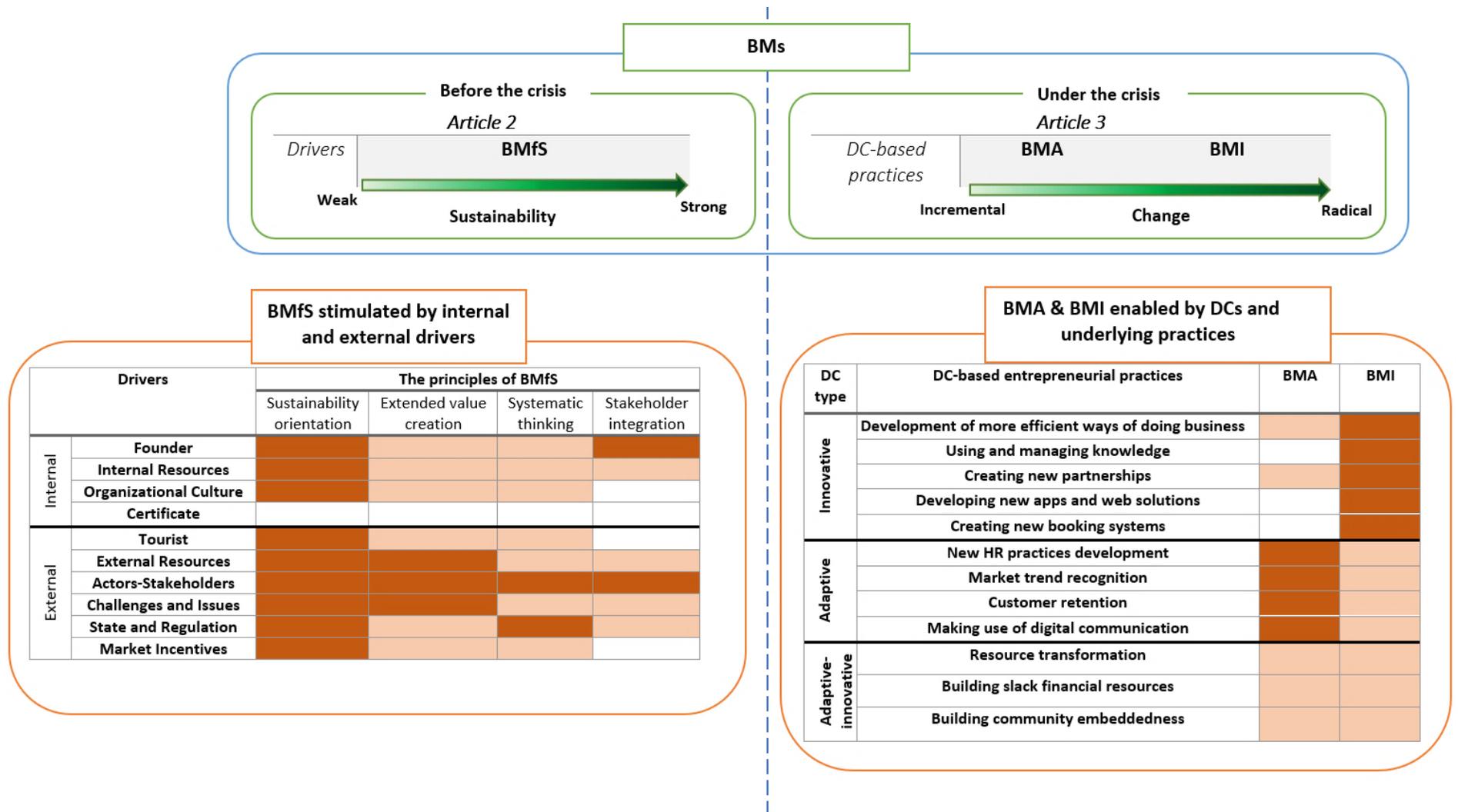


Figure 7: An illustrative overview of BMs before and under the crisis based on articles 2 and 3 (the color intensity whether lighter or darker implies the strength of a factor)

Therefore, the three articles jointly shed light on BM changes to incorporate sustainability and enhance resilience. The results demonstrate that BM changes are stimulated and driven by a set of internal and external drivers and enabled by building DCs. Accordingly, this thesis aims to contribute to BMI for sustainability research by providing a thorough explanation of the critical drivers and DCs underpinning changes to BMs. The overall research question is answered in Sections 5.1.2, 5.1.3, and 5.2, while in Sections 5.1.1 and 5.3, I present further reflections and elaborations based on the overall findings, both the already adopted and displayed results and those that are not outlined in the appended articles.

5.1. Drivers and practices of business model for sustainability

According to article 1, there is a lack of systematic analysis of the antecedents of BM change in nature tourism BM research; therefore, articles 2 and 3 were meant to empirically bridge this gap. Based on the findings of articles 2 and 3, the relevant drivers are discussed here in terms of their nature as either internal or external drivers. Article 2 indicates that the process of changing nature tourism BMs to embed environmental and social aspects is driven by four internal and six external factors. This is addressed regarding SBM principles, i.e., *sustainability orientation, systematic thinking, stakeholder integration, and extended value creation* (Breuer et al., 2018). Inspired by Ritala et al. (2018), who characterize a BMfS through business practices, in Section 5.1.1, I explain the practices¹³ carried out by five companies¹⁴ to embed environmental and social aspects (sustainable value creation). To answer the research question, in Sections 5.1.2 and 5.1.3, I shed light on the drivers that give rise to the practices. Moreover, as article 3 illustrates, a crisis can act as a driver of transformation by motivating entrepreneurs to rethink their BMs to respond to external threats and seize new opportunities (Saebi et al., 2017; Benjamin et al., 2020; Morgan et al., 2020; Sigala, 2020).

5.1.1. Business practices underlying sustainable value creation

Compared to environmental sustainability, social sustainability has gained less attention among scholars (Brehmer et al., 2018). Here, I reflect on the social and environmental practices carried out by nature tourism companies through several examples from five cases to demonstrate how sustainable value is addressed across cases. The examples were synthesized with regard to value creation for nature, animals, and societal stakeholders, by decreasing possible negative impacts on the environment and/or increasing positive outcomes while enhancing the sustainable performance of the company. As illustrated in Tables 12 and 13, social and environmental practices refer to both SBM principles (Breuer et al., 2018) and three ontologies underpinning

¹³ Only some of them were used and briefly explained before, in article 2.

¹⁴ In article 2: Vegex, Hunder, Øya, Auro & Archart

sustainability innovations: skepticism, pragmatism, and idealism (Ritala, 2019). The principles are interrelated; for instance, a business practice might rely on both stakeholder integration and extended value creation. Nonetheless, the most relevant principle is outlined in Tables 12 and 13. Given social practices, for instance, *Archart* argues that targeting the segments of nature photographers and enthusiasts, as well as responsible tourists, can open up great opportunities for local tour operators, allowing several of them to benefit from guest visits. These segments are more likely to respect nature and society, contribute to scientific databases, and stay several weeks in the region. By incorporating a more comprehensive approach, the company adopts *systematic thinking* informed by a system-level perspective to go beyond its current value creation. In line with Schaltegger et al. (2012) and Boons and Lüdeke-Freund (2013), this perspective provokes the creation of superior value for multiple societal stakeholders, thus, it accords with Ritala's (2019) idealistic approach, which has been recently adopted by Høegh-Guldberg et al. (2022) to address community-based sustainability innovations in rural tourism.

Likewise, *Auro* emphasizes the approach of focusing on local knowledge and competencies to create an authentic experience and a good story for guests. Considering that the company could have hired professional artists from other parts of the world, by hiring local artists, it can be economically more efficient by avoiding the introduction of workers from far away and simultaneously creating opportunities for locals (*extended value creation*). Interestingly, even though companies could have applied nonlocal suppliers as providers of high-quality services and materials, all informants (from five cases) stressed concern for prioritizing local materials and suppliers (*stakeholder integration*). This is done to ensure long-term cooperation and encourage gradual quality improvements. Inspired by the pragmatic perspective (Ritala et al. 2018; Ritala, 2019), the two latter examples are more incremental than the former informed by the idealistic approach, and result in a gradual improvement in social well-being.

Drawing on environmental aspects, *Archart* has developed a code of conduct in terms of how to behave in nature and around endangered and shy species (animals and birds) and how to report irresponsible behavior by others when such behavior is witnessed. Likewise, *Øya* has developed some instructions (which *Øya* calls "environmental policies") and hung them on walls and the doors of refrigerators in accommodations to encourage responsible behavior in both accommodations and nature. The former practice resonates with the *systematic thinking* element, whereas the latter mainly reflects the *sustainability orientation* of the BM. Both examples reside in the pragmatic perspective since they slowly reduce the negative impacts of tourism activities on the natural surroundings. In a similar vein, several examples are illustrated in Tables 12 and 13 to inform the most relevant SBM principle and ontology of the cases.

Table 12: Cross-case analysis of social practices with respect to SBM principles and ontologies for sustainability innovations

Description of social practices	Featured by	Underlying SBM principle	Related ontology
Holding bird festivals to promote the destination and expand the activities from the summer season to year-round. These festivals, as claimed by the company, contribute to increasing the resilience in the region.	Archart	Systematic thinking	Idealism
Targeting the segments of nature enthusiasts who are more likely to respect nature and contribute to scientific databases, are more willing to stay several weeks in the region, and try different products offered by several tour operators.	Archart	Systematic thinking	Idealism
Cooperating with researchers to contribute to scientific projects related to nature and bird conservation by establishing bird ringing stations in the region both to increase awareness across the community and to contribute to the scientific pool of knowledge.	Archart	Stakeholder integration	Idealism
Engaging with newcomers, inspiring, and assisting them in building their network. The main idea is to benefit the whole community and share the profit with other operators, instead of the profit going to one or two companies.	Auro and Archart	Systematic thinking	Idealism
Not promoting irresponsible tour operators.	Archart	Sustainability orientation	Pragmatism
Not collaborating with those offering motorized activity in order to remain committed to the eco-certificate and enhance sustainable performance by being selective and cooperating with partners who hold similar sustainability concerns.	Hunder and Øya	Sustainability orientation	Pragmatism
Arranging programs for schools and students, as well as for locals to create awareness of how to act responsibly in nature toward animals (birds). Since the municipality did not take the initiative, the company needed to act.	Archart and Hunder	Extended value creation	Pragmatism
Prioritizing local suppliers and materials and supporting them to secure long-term cooperation, as local suppliers have gradually improved their service quality when delivering projects.	Vegex, Hunder, Øya, Auro and Archart	Stakeholder integration	Pragmatism
Holding and taking part in local food festivals.	Øya	Extended value creation	Skepticism
Prioritizing locals when considering the employment of staff.	Auro and Øya	Sustainability orientation	Pragmatism
Concentrating on hiring people in permanent positions, which can cost more versus hiring more qualified seasonal workers.	Hunder and Auro	Extended value creation	Pragmatism
Developing affordable offers for locals following the philosophy that, similar to tourists, locals have the right to afford and enjoy food and products.	Hunder	Extended value creation	Pragmatism
Introducing the company's identity as the "destination development company".	Auro and Archart	Systematic thinking	Idealism
Collaborating and taking part in a project related to destination development to build sustainable destinations and consolidate sustainable thinking.	Vegex, Hunder, Øya, Auro and Archart	Stakeholder integration	Pragmatism
Pursuing a long-term perspective and publicly expressing the company's sustainable values.	Hunder, Øya, Auro and Archart	Sustainability orientation	Pragmatism
Focusing on local knowledge and competencies to create an authentic experience and a good story for guests. Although the company could have hired professional artists by applying local competencies, it can be economically more efficient by avoiding the introduction of workers from far away and, at the same time, creating opportunities for local artists.	Auro	Extended value creation	Idealism
Training staff members to be good ambassadors in society, regardless of whether they continue to work with the company.	Auro	Extended value creation	Pragmatism
Following a training scheme once a year to introduce the company's values and sustainability approach to employees and training them on how to work responsibly.	Hunder	Sustainability orientation	Pragmatism

Table 13: Cross-case analysis of environmental practices with respect to SBM principles and ontologies for sustainability innovations

Description of environmental practices	Featured by	Underlying SBM principle	Related ontology
Not pursuing the strategy of attracting as many tourists as possible because of their sustainability approach. Focusing on the approach of being selective and attracting responsible tourists.	Øya and Archart	Sustainability orientation	Pragmatism
Facilitating tourists' experience of nature, local history, and the local lifestyle by offering nonmotorized activities such as e-bike, kayaking, and walking trips. Not chasing the wild animals (whales) during whale watching tours.	Vegex	Sustainability orientation	Pragmatism
Developing online content and disseminating a bird-watching guidebook to increase tourists' appreciation of nature and to guide them through certain safe places, such that they become less likely to disturb the birds' habitat. The company has deliberately chosen to not expose fragile bird habitats to tourists.	Archart	Systematic thinking	Idealism
Developing an innovative product (wind shelter) to guide tourists through nature. In the past, tourists used to disturb birds since they could not predict where humans were in order to avoid them due to haphazard patterns and tracks caused by footprints. Performing assessments across landscapes to find the right location (minimum disturbance) to place the wind shelters.	Archart	Systematic thinking	Idealism
Developing a code of conduct regarding how to behave in nature and around endangered and shy species and how to report irresponsible behavior by others when such behavior is witnessed.	Archart	Systematic thinking	Pragmatism
Highlighting the company's responsibility to increase guests' awareness of nature and animals.	Øya and Archart	Sustainability orientation	Pragmatism
Installing particular appliances on the showers within accommodation to save water and electricity. Developing and hanging instructions and tips on walls to encourage responsible behavior in both the accommodation and nature. The shortest stay allowed by the company, is two nights to avoid washing the bed sheets so often. Planning to apply solar cells to generate electricity.	Øya	Sustainability orientation	Pragmatism
Offering an ecological breakfast.	Hunder and Øya	Sustainability orientation	Skepticism
Being mindful and extra careful about waste during tours in nature and cleaning the place thoroughly to maintain its integrity for future tourists and visitors.	Vegex	Systematic thinking	Pragmatism
Following the rules and specific walking tracks in nature and protected areas assigned by the government.	Vegex and Auro	Systematic thinking	Skepticism
Replacing current snowmobiles with more efficient snowmobiles; silent and eco-friendly engines that generate less smoke. Reducing tours (safari) traveling long distances and limiting such journeys to group bookings instead of individual bookings.	Auro	Sustainability orientation	Pragmatism
Following a short-distance (traveling) strategy when purchasing ingredients (local ingredients), harvesting the required herbs, vegetables, and fruits in the garden, and making everything from scratch in the kitchen.	Hunder and Auro	Sustainability orientation	Pragmatism
Not throwing out recyclable wastes, which can be used to feed animals, and never chopping trees down to make a fire in nature but instead carrying the wood needed for a fire themselves.	Auro	Sustainability orientation	Pragmatism
Relinquishing or even not offering some products that might cause damage to nature and animals.	Auro and Archart	Systematic thinking	Idealism
Preparing particular guidelines for both tourists and tour guides about how to behave around wild animals if accidentally encountered, not feeding them, or stopping to take pictures.	Hunder	Sustainability orientation	Pragmatism
Using installed campfires at particular places in nature, not making fires elsewhere and not scheduling nature tours every day to avoid causing disturbance to wildlife.	Hunder	Systematic thinking	Pragmatism
Focusing on storytelling about the region's culture and nature to provide guests with knowledge and appreciation to feel connected and attached to the place.	Vegex, Auro, and Øya	Systematic thinking	Pragmatism

5.1.2. Internal and external drivers

Importantly, given the findings of article 2, of the 10 identified drivers (four internal and six external), the company's founder is the most decisive. Consistent with the extant literature (Sosna et al., 2010; Martins et al., 2015; Foss and Saebi, 2017; Rauter et al., 2017; Miras-Rodriguez et al., 2018; Näyhä, 2020), this finding demonstrates that any other driver, whether internal or external, needs the recognition of the founder, who is central in the interpretation of the drivers and related decision-making processes. Given sustainability concerns, the results show that the founders characterize themselves according to their values, beliefs, lifestyles, educational backgrounds, and cultural roots, which can be influential in different ways. For example, the founder's sense of responsibility toward society, partners, nature, and animals is the most important characteristic reflecting the founder's significant role in driving BMs toward sustainability through *stakeholder integration* and *extended value creation*. Similarly, prior studies (Sampaio et al., 2012; Font et al., 2016; Hoarau-Heemstra and Eide, 2016; Rauter et al., 2017) stress the importance of personal values and ethical stances in engaging in environmental and social practices. In such a stance, engaging with the local community and providing support to other tourism companies resulted in sustainable value creation, as previous nature tourism literature (Sampaio et al., 2012; Kallmuenzer et al., 2018) has also pinpointed the importance of pursuing nonmonetary goals through collaboration with local networks and regional and local embeddedness in terms of sustainability decision-making.

The founder's vision, either short-term or long-term, is also interpreted as an important driver of embedded systematic thinking by focusing on a vision in which environmental and social practices are prioritized to serve long-run goals, even if the short-term consequences are not beneficial versus short-term thinking by primarily pursuing of short-term financial objectives. Moreover, such a vision can determine whether employment policies are focused on motivating employees to adopt a *sustainability orientation*. Similarly, past studies (Ortiz-de-Mandojana and Bansal, 2016; Miras-Rodriguez et al., 2018; Bocken and Geradts, 2020) confirm the importance of following long-term sustainability goals instead of an immediate short-term financial return to successfully transform BMs toward sustainability and enact environmental practices. In addition, the founder's attitude can support sustainable value creation when the company's mission and values are openly and transparently communicated to the public. This finding suggests that an open approach enables *stakeholder integration* by properly informing the local community of the company's green profile, thus appeasing those who hold similar sustainability concerns regarding further collaborations. Furthermore, the findings explicitly point to organizational culture and internal resources as having a significant role in defining sustainable performance.

Regarding organizational culture, the findings emphasize promoting a responsible culture, defined here as a deliberate attempt to create an organizational culture that is internally inspiring and externally raises awareness among various stakeholders. Such culture is referred to by past studies as sustainability or green or encouraging (innovative) organizational culture (Harris and Crane, 2002; Stoughton and Ludema, 2012; Näyhä, 2020). This finding is supported by several studies (Boons and Lüdeke-Freund, 2013; Hoarau-Heemstra and Eide, 2016; Miras-Rodriguez et al., 2018; Pieroni et al. 2019; Näyhä, 2020), who affirm that organizational culture is critical in creating an innovative atmosphere, establishing environmentally friendly practices and moving toward BMI for sustainability. The findings suggest that promoting a responsible organizational culture contributes to following the *four principles of SBMs* and requires a transparent approach where inspiring employees to enhance their performance for sustainability orientation is valued. Miras-Rodriguez et al. (2018) argue that compared to less engaged employees, more engaged employees are more supportive of and beneficial for implementing sustainability practices; in addition, they have better insight into internal processes and may develop more innovative practices for sustainability.

Recognizing internal resources as an internal driver, the findings highlight the significance of HR in the quality enhancement and *sustainability orientation* of BMs. By targeting and recruiting those who simultaneously meet the relevant educational requirements and have values that are closely aligned with the organization's values, companies are seeking to establish a *sustainability orientation*. The importance of relevant education to encourage innovation is also emphasized by Näyhä (2020). Previous studies (Hoarau-Heemstra and Eide, 2016; Miras-Rodriguez et al., 2018; Bocken and Geradts, 2020; Näyhä, 2020) emphasize the need for employee support achieved by hiring like-minded individuals in terms of sustainability concerns and providing relevant training to facilitate innovations and BM changes for sustainability. Moreover, the findings underscore the crucial role of HR in relation to the duration of job contracts to ensure *extended value creation* through long-term contracts rather than temporary seasonal contracts. To reach sustainability-related goals, employee satisfaction is highlighted as a critical internal driver (Rauter et al., 2017) through securing stable positions within a promising working environment, especially in rural tourism (Kallmuenzer et al., 2018) and wildlife tourism (Hoarau-Heemstra and Eide, 2016). Another imperative internal resource is a crucial type of knowledge needed to design activities and create value, which is achieved by employing a local knowledgeable workforce. Such internalized competitive knowledge can be a driver underlying a *sustainability orientation*. This finding is in accordance with Hoarau-Heemstra and Eide (2016), who highlight the crucial role of knowledgeable guides in the co-creation of value with tourists and ensuring high-quality whale-watching products.

Additionally, the idea of benefiting from cost savings and inflicting less environmental damage drives companies to engage in *systematic thinking* and *orient* themselves toward *sustainability*. This is done by optimizing their usage of electricity and water, replacing old engines with eco-efficient engines that generate less pollution, and following a short-distance transport policy in procurement and employment activities. Such cost savings are one of the main motivators for resource efficiency to reduce waste, resource consumption, and negative environmental footprints (Garay and Font, 2012; Bossle et al., 2016; Hoarau-Heemstra and Eide, 2016; Spieth et al., 2018). They are interpreted as a win-win strategy through which a company can preserve its resources as well as nature (Miras-Rodriguez et al., 2018). In the literature, this is called responsible efficiency (Spieth et al., 2018), resource efficiency (Pieroni et al., 2019; Näyhä, 2020), and emission or resource savings (Miras-Rodriguez et al., 2018).

Furthermore, based on the findings from the founders of eco-certificated businesses, the commitment to meeting the requirements for the eco-certificate has some, though limited, potential to orient their BMs toward sustainability. As the findings illustrate, holding an eco-certificate is the least important internal driver and therefore does not play a significant role in moving the BMs in this study toward embedding sustainability. This finding highlights the certificate's purpose and underlying requirements as a bureaucratic exercise rather than a driver. Interestingly, Kallmuenzer et al. (2018) also regard certifications as disincentives, a barrier rather than a driver, emphasizing that the related bureaucratic procedures are costly in terms of HR. Likewise, Sampaio et al. (2012) illustrate that ecolabels do not automatically signify that a business is green, since the personal values and worldviews of the founders of small tourism businesses define how strongly a business is oriented toward environmental practices and whether these practices are basic and routine or novel and innovative. However, some past studies refer to environmental certifications as drivers of eco-innovation (Bossle et al., 2016) and the greater adoption of sustainability practices (Font et al., 2016).

Given the external drivers identified in article 2, the findings reveal that tourists are a critical external driver because they can also act as a barrier to sustainability. These findings are threefold, as three main customer/tourist segments are identified: responsible, irresponsible, and common tourists. The first segment has the potential to encourage sustainable performance, as they are likely to act in eco-friendly ways due to their concerns about sustainability issues. Accordingly, they make companies adopt a *sustainability orientation*. In the tourism literature, this finding is interpreted in terms of meeting customer expectations or reaching social acceptance (Kallmuenzer et al., 2018). Customers who value the eco-friendly performance of companies show more loyalty and increase the companies' profit more than others (Hoarau-

Heemstra and Eide, 2016; Miras-Rodriguez et al., 2018; Näyhä, 2020). In contrast, irresponsible tourists who intentionally ruin attractions and disturb wildlife are perceived as a barrier. Nonetheless, the findings show that such customers can provoke companies to put even more effort into preserving natural habitats to create environmental value (*extended value creation* and *systematic thinking* elements). Unlike the first two groups, the last group is positioned in between as neither holding any specific concerns about sustainability nor deliberately intending harm; they might request less eco-friendly products, however. Font et al. (2016) also recognize the absence of customer demand for sustainable practices as a barrier. In contrast, Rauter et al.'s (2017) study does not find customer preferences to be a significant driver stimulating BMs for sustainability. The findings further indicate that the purposeful intention to educate and increase tourists' awareness acts as a driver ensuring a *sustainability orientation, systematic thinking, and extended value creation*. This finding is supported by Font et al. (2016), who view sustainability practices as including encouraging tourists to behave in eco-friendly ways, contribute to charities, buy local products, and hire local people.

In addition to tourists, key external resources can drive BMs toward sustainability by meeting *all minimum requirements for an SBM* (Breuer et al., 2018). External resources that nature tourism businesses mainly rely on such as fragile nature, scientific knowledge, and materials give rise to the development of SBMs through the pursuit of practices associated with nature and animal protection, making contributions to scientific projects related to wildlife and ensuring accessibility to key materials supplied by local partners. Due to the heavy reliance of nature tourism on wildlife and local communities, such businesses are required to protect the integrity of nature, consume local goods, hire local suppliers and workers and collaborate with relevant researchers (Carlsen et al., 2001; Garay and Font, 2012; Font et al, 2016; Hoarau-Heemstra and Eide, 2016; Kallmuenzer et al., 2018).

Moreover, BMs are oriented toward sustainability through cooperation with external stakeholders, which can be stimulated either internally or externally and helps enhance the *four principles of SBMs*. Internally provoked by rejecting partnerships that are perceived to be contrary to the *sustainability orientation* of the company and establishing networks where more experienced companies support newcomers to the local market. Social enterprises usually aim to empower partners who hold similar concerns and passions to ensure long-term collaboration (Spieth et al., 2018). The literature suggests that founders who weigh the environment and social value creation heavily, even in the absence of economic gains, are very likely selective in choosing partners based on their social and environmental performance (Font et al., 2016; Spieth et al., 2018). Externally stimulated when companies are inspired or forced by their

partners with strong green profiles to adjust their perspective and horizons to keep long-term partnerships. In the wildlife tourism (Hoarau-Heemstra and Eide, 2016), as well as tourism research (Font et al., 2016), this is referred to as an incentive for companies or stakeholder legitimization. The latter is the process through which a company seeks to meet the requirements of particular partners to obtain new partnerships. Drawing on the broader literature on eco-innovations and BMI (Bossle et al., 2016; Andreini and Bettinelli, 2017; Näyhä, 2020), the importance of cooperation across a company's network is also emphasized as a driver. The findings further highlight a collective approach as being effective and practical across the industry where sustainable practices are prioritized by all involved stakeholders and can be adopted from other skillful actors and imitated by younger companies. Likewise, Andreini and Bettinelli (2017) argue that large incumbent firms can positively influence smaller young firms in revising their BMs.

Next, government and regulations can also prompt companies to align their performance by serving either as facilitators or regulatory pressures. Although regulatory pressure is emphasized by the findings as a critical factor toward a *sustainability orientation* and promoting *systematic thinking*, the government's role as a facilitator can inform the elements of *extended value creation* and *stakeholder integration* by building up collaborations among relevant actors and introducing various projects for the sustainable development of destinations. Relatedly, the potential role of tax incentives (Rauter et al., 2017), ecological regulations (Kallmuenzer et al., 2018), pressure from activist groups (Miras-Rodriguez et al., 2018), and EU policies, as well as national policies (Näyhä, 2020) in driving sustainability practices, are highlighted across the literature.

As the findings confirm, market incentives, while being inherently financial-based, encourage a *sustainability orientation*. For instance, having a green profile can strengthen a company's public image among both customers and the local community, helping the company reach the desired market. This finding is also supported by Hoarau-Heemstra and Eide (2016) and Miras-Rodriguez et al. (2018), who claim that stakeholder recognition enhances a company's corporate reputation and thus competitive advantage. In contrast, Rauter et al. (2017) assert that market incentives such as building a competitive advantage and entering a new market may not motivate a sustainability orientation. Relevantly, Bonilla-Priego et al. (2021) confirm that being motivated by commercial goals is crucial to incorporating sustainability.

Another external driving factor is the emergence of a challenge or an issue that can be resolved by a solution through which sustainable value is innovatively created. Challenges can vary from, for example, concerns over the fragile Arctic context in terms of the carbon footprint of

tourism products and possible damage to nature and wildlife to a lack of support from local municipalities or competitors. Solutions for the first challenge primarily aim to mitigate the negative impacts by relying on *systematic thinking* in which the benefits for wildlife, future companies and inhabitants are taken into serious consideration. As for the latter, the findings suggest that such challenges prompt companies to mobilize other actors to ensure sustainable performance at the destination level, thus, this leads to the development of a BMfS through which *all four principles* can be met. In contrast, Rauter et al. (2017) find mixed results about whether a lack of external support drive or hinder sustainability integration; nevertheless, they underline the role of lobbying in enacting supplementary regulations that favor sustainability. In addition, a lack of support from competitors in knowledge sharing can drive companies to overcome this problem by acquiring the needed knowledge through recruiting local partners (social value creation through *extended value creation* and *stakeholder integration*). This network can provide companies with diverse types of resources and external knowledge and empower them to identify new opportunities and partnerships (Zhang et al., 2021).

Given the findings of article 3, the COVID-19 crisis, as an external driver has embarked on various BM changes, both incremental (adjustments) and radical (innovations), which are enabled through creating and applying the firms' DCs over time. Tourism entrepreneurs have addressed the crisis by changing the elements of their BMs. This finding is confirmed by past recent studies (e.g., Ritter and Pedersen, 2020; Jiang et al., 2021c). In this sense, the relevance of building DCs is discussed following the chapter in Section 5.2. Relatedly, the findings reveal that the factor of free time due to a significant decline in tourism activities during the crisis allowed for the emergence of innovative practices. Recently, several studies have reported this finding (Bocken and Geradts, 2020; Kraus et al., 2020; Breier et al., 2021; Jiang et al., 2021b), as companies consider this time break to be a driver toward innovating BMs. Morgan et al. (2020) also suggest that crises reveal current product gaps, which inspire entrepreneurs to seize opportunities to address and close these gaps.

5.1.3. Stimulating business models toward sustainability via drivers

The findings of article 2 reveal that various drivers differently stimulate BMs toward embedding sustainability based on the extent to which each driver can give rise to the four principles underlying a BMfS. This implies that some drivers contribute to reaching the principles more than others; while some can help a company align with all the principles, others set the stage only partially for the principles. This finding reveals that drivers are not equally significant with regard to incorporating sustainability. Some drivers (e.g., founder, organizational culture, external resources, external stakeholders, challenges, and government)

enable companies to follow *all four principles*. Nonetheless, they highlight some principles more than the rest. For an illustration of this, see Figure 7 and the table on the left side. Given the alignment among environmental, social, and business objectives (Rauter et al., 2017), be that alignment strong or weak (Roome, 2012; Abdelkafi and Täuscher, 2016), the findings also specify that nature tourism BMs are *variously* transformed and stimulated to embed social and environmental aspects. Inspired by prior studies (Dyllick and Muff, 2016; Upward and Jones, 2016; Landrum, 2018; Ritala, 2019; Bonilla-Priego et al., 2021), the findings suggest a *sustainability continuum* along which three types of BMfS inform the balance among the element of Triple Bottom Line: type I: maximization of shareholder value, type II: aiming for the Triple Bottom Line and type III: truly BMfS. Figure 8 presents the sustainability continuum with the identified drivers as well as long-term proactive and short-term reactive perspectives.

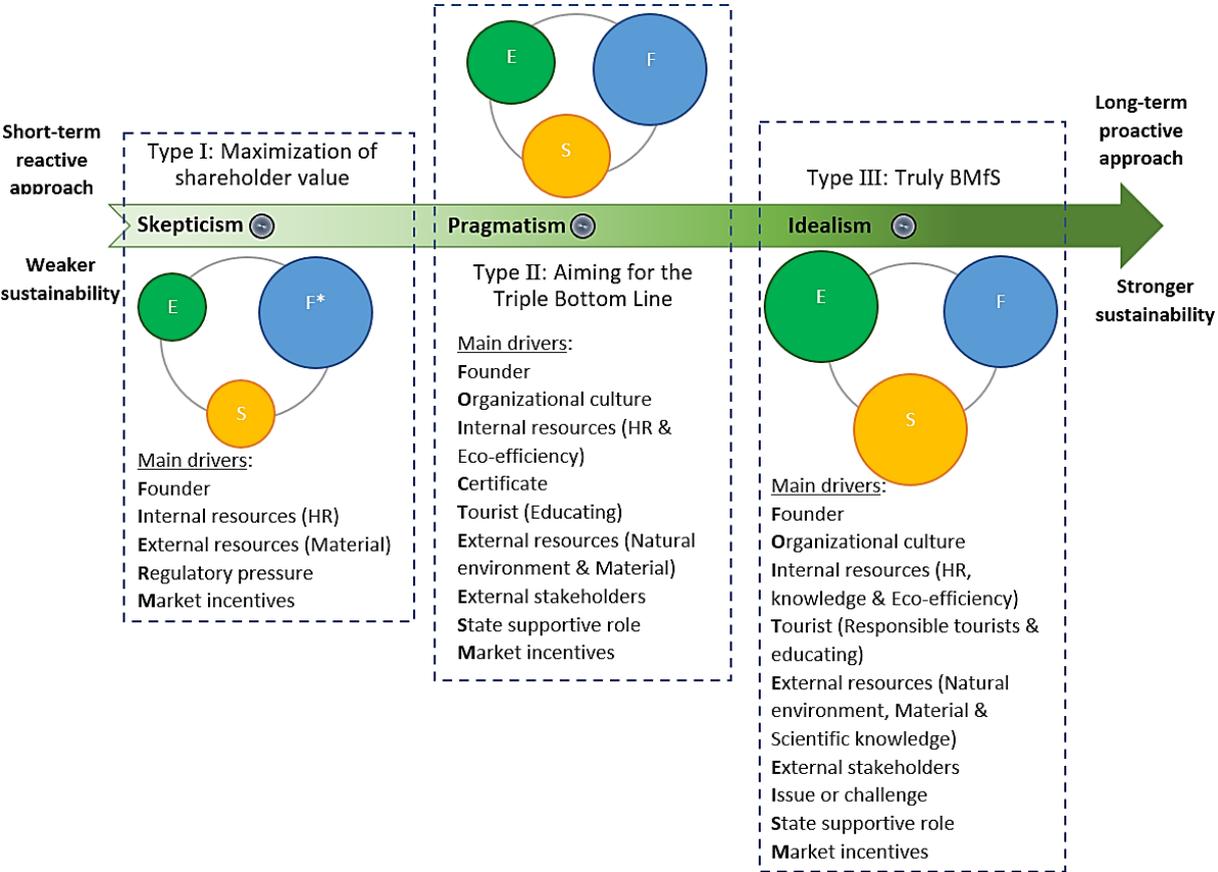


Figure 8: A typology of BMfS (*F: Financial, E: Environmental, & S: Social)

Type I: By performing basic sustainability-related practices informed mostly by the skeptical and the pragmatic approaches (Tables 12 and 13) (Ritala, 2019), case *Vegex* can be placed in this category. Its focus is on conducting very basic practices to address sustainability and is driven primarily by a limited set of drivers that promise concrete financial value or are enforced by regulations and stakeholders. Here, the alignment is more inclined toward profit maximization and risk minimization, and thus, the relevant approach is in line with the skeptical view by Ritala (2019). In contrast, Bonilla-Priego et al. (2021) claim that these tourism companies are

basically driven by ethical considerations and not by commercial and competitive motivations, but usually lack the ability to determine how to embed sustainability into BMs. These authors touch on sustainability proactivity among a range of companies from those with more limited motivations and reactive responses to those that are proactively oriented toward sustainability (Bonilla-Priego et al., 2021). Existing literature indicates that seeking profit maximization and viewing sustainable practices as costly impede the adoption of a proactive sustainability approach and therefore the BM transition toward sustainability (Garay and Font, 2012; Upward and Jones, 2016; Rauter et al., 2017; Kallmuenzer et al., 2018). These companies pursue a short-term perspective and more likely neglect the interests of stakeholders (Ortiz-de-Mandojana and Bansal, 2016). Past studies describe such an orientation toward sustainability as managing refined shareholder value (Dyllick and Muff, 2016) and being business-centered by doing less bad (Landrum, 2018).

Type II: Given a more balanced status among the three pillars, the next BM type, which also belongs to eco-certified businesses (*Hunder and Øya*), delivers more concrete value for nature and society than the prior BMs because such companies strive to move beyond monetary value by minimizing the negative effects of business. This intermediate position is called being systematic by doing more good (Landrum, 2018) or managing the Triple Bottom Line (Dyllick and Muff, 2016) and resonates with the pragmatic view by Ritala (2019). Compared to *Vegex*, cases *Hunder* and *Øya* are stimulated and driven toward sustainability through organizational culture, eco-certification, cost savings, educating tourists, external stakeholders, the government, and external resources in terms of fragile nature. Practices that are carried out by *Hunder* and *Øya* above all comply with the pragmatic view (Tables 12 and 13).

Type III: Drawing on strong sustainability at the end of this continuum, these companies (*Auro and Archart*) seize opportunities related to sustainability issues to contribute to creating of positive value for nature and society in addition to minimizing of potential negative impacts and they are stimulated by a wide range of drivers. Inventing an innovative solution for sustainability issues is in concert with an idealist perspective (Ritala, 2019; Høegh-Guldberg et al., 2022). *Auro* and *Archart* rely on sustainable value creation as their main competitive advantage and are developed to tackle sustainability issues by offering products and services as practical solutions to meet challenges. Such an attitude originates from the founder's concerns and strong awareness of these issues and results in a proactive approach to embedding social and environmental aspects in BMs (Sampaio et al., 2012). The sustainable practices presented by *Auro* and *Archart* inform both the idealist and pragmatic approaches of Ritala (2019) (Tables 12 and 13). As Bonilla-Priego et al. (2021) denote such tourism companies are more likely than

others to innovate their products by redesigning them to increase social value creation and are considered to be true sustainable businesses (Dyllick and Muff, 2016) and regenerative because they repair system damages (Landrum, 2018).

As such, the findings disclose that some drivers correspond to the BMs with stronger embedded sustainability (the idealism perspective). For instance, the effort to target responsible tourists, educate them, contribute to the scientific knowledge (external resource), and be conscious of the potential environmental footprints of products and services through the recognition of related issues together with a practical solution. This last finding is supported by Sampaio et al. (2012), who relate environmental practices related to recognized damaging activities to a higher level of self-efficacy. Landrum (2018) also refers to the activities performed by companies with a strong sustainability perspective, such as repairing and planting for diversity and biodiversity conservation. Nonetheless, market incentives and regulatory pressures play critical roles in orienting BMs toward sustainability with weaker embedded sustainability (the skeptical perspective). This finding is in accordance with Landrum (2018) that emphasizes sustainability initiatives for such BMs as reputation, risk management, cost reduction, profit, competitiveness, and employee retention.

Depending on the approach a company follows, either proactive or reactive, the drivers may function differently. With respect to external stakeholders, the findings indicate that having comparatively weaker sustainability alignment and being reactive (the skeptical perspective) can lead to a sustainability orientation in which the stimulus is created by an external stakeholder and the company is required to align its performance to either keep the partnership alive or stay in the market (regulatory pressure). In contrast, a proactive pragmatic approach and stronger alignment explain how cooperation is initiated by a company to either engage with other actors or decline some of the others. This finding accords with Sampaio et al. (2012), confirming that founders with stronger environmental concerns and a higher level of self-efficacy are more eager to engage with other businesses to share experiences and enable problem-solving and learning. Such logic can determine how a company is driven toward sustainability through the factors that do not yield financial value instantly in the short-term. This occurs through practices that are akin to the idealist perspective, such as targeting responsible tourists, encouraging a responsible organizational culture, minding external resources in terms of nature protection strategies, contributing to scientific projects, and tackling sustainability issues.

5.2. Enabling business model change via dynamic capabilities

Here, I explain how BM changes take place and how companies engage in change processes in terms of DC-based practices. To change their BMs, companies are required to build DCs, which are known as critical factors enabling them to make changes and enhance their resilience and, eventually, the sustainability of their competitive advantage (Leih et al, 2015; Kurtz and Varvakis, 2016; Bocken and Geradts, 2020; Duchek, 2020). The findings of article 3 conceptualize BM change through BMIs and BMAs and show that three types of DCs differently establish foundations for BMIs and BMAs because the nature of the DCs defines change types. Innovative DCs mostly give rise to BMI rather than BMAs, while adaptive DCs are geared toward BMAs. Such finding is in line with previous studies (e.g., Wang and Ahmed, 2007; Saebi, 2015; Jiang et al., 2021b). Moreover, according to the findings, adaptive-innovative DCs almost equally yield both BMI and BMAs. Innovative DCs, even on a very low scale, yield BMIs by enacting a few innovative practices among smaller and younger companies. This finding is supported by Battisti and Deakins (2017), who conclude that even very small companies with limited resources can build resilience by proactively cultivating relevant DCs through which integration of external resources to internal resources is ensured.

Inspired by Saebi (2015) and Gauthier and Gilomen (2016), the findings address BMIs through radical changes, which mostly inform a new value proposition and then yield a new mix of value creation, delivery, and capture. Such radical changes can be materialized through a limited bundle of BM components or influence almost every aspect of a BM. This means that a new value proposition often requires a new set of activities, channels, resources, etc., and can bring about a new formulation of costs and revenues. This finding suggests that innovations necessitate a systematic change in the underlying mechanism of BMs to facilitate desired changes. This finding agrees with the literature (Demil and Lecocq, 2010; Mezger, 2014; Inigo et al., 2017; Teece, 2018), which asserts that changing one component of a BM may entail a change to other components. In contrast, BMAs are mostly enacted by adjusting a limited set of elements and it is not required that all blocks of a BM change.

Given prior studies (Mezger, 2014; Saebi, 2015; Inigo et al., 2017; Teece, 2018), to operationalize DCs and change BMs, companies are required to enact business practices, and as the findings suggest, 12 DC-based practices are characterized in three main areas: resource, market, and technology (Figure 9). To clarify BM changes across seven cases (Alpha, Beta, Gamma, Delta, Epsilon, Zeta, and Eta), Table 14 outlines various examples of BMIs and BMAs and the underlying practices suggested by the data analysis. The gray columns are assigned to describe innovations, while the white columns specify adjustments.

Table 14: Cross-case analysis of BMIs and BMAs according to DC-based practices (Adopted from Sahebalzamani et al. (2022))

BMIs	Related practices	Cases	BMAs	Related practices	Cases
Splitting the company into two business units; each can be more specialized in particular areas	Resource transformation- Development of more efficient ways of doing business-New HR practice development	<i>Alpha & Epsilon</i>	Following a slow-paced development strategy for the tourism unit and instead focusing on the nature-based architecture business temporarily	New HR practice development-Using and managing knowledge- Resource transformation	<i>Alpha</i>
Replacing the old cars with new cars, of which some would be electric	Resource transformation-Market trend recognition	<i>Beta</i>	As driven kilometers decreased, the payment to neutralize carbon emissions decreased significantly	Resource transformation- Market trend recognition	<i>Beta</i>
Designing a portable sauna as a new tourism product	Resource transformation-Market trend recognition	<i>Beta</i>	Being effective with resources by spending less on marketing and applying the savings	Development of more efficient ways of doing business-Resource transformation-Building slack financial	<i>Delta & Eta</i>
Trying other activities than tourism by using the whale safari boat to gather water samples for research purposes	New HR practice development- Creating new partnerships- Resource transformation	<i>Gamma</i>	Closing all tours in summer 2020 and instead concentrating on next winter	New HR practice development- Resource transformation-Building slack financial resources	<i>Zeta & Gamma</i>
Hiring new employees with desired competencies to conduct changes	New HR practice development- Creating new apps and web solutions	<i>Epsilon</i>	Pursuing a flexible approach in terms of working place via digital communication tools	New HR practice development- Making use of digital communication	<i>Alpha, Zeta & Delta</i>
Developing applications for external funding, innovation grants, and new investors	Building slack financial resources- Creating new partnerships	<i>Epsilon, Zeta & Eta</i>	laying off some employees and focusing on efficient HR planning	Development of more efficient ways of doing business- New HR practice development	<i>Epsilon, Zeta & Eta</i>
Launching projects to eco-certify the company and collaborate with researchers to create new products based on scientific knowledge and making the region a hotspot for nature tourism year-round	Building slack financial resources- Creating new partnerships	<i>Eta</i>	Actively working on a team culture that motivates employees	New HR practice development	<i>Epsilon</i>
Moving the architecture unit to Tromsø and Copenhagen to decrease flight journeys and find new Nordic clients	Development of more efficient ways of doing business- Resource transformation	<i>Alpha</i>	Exploring other sources of income by trying other non-tourism areas	New HR practice development- Resource transformation-Building slack financial resources	<i>Alpha, Gamma & Delta</i>

BMIs	Related practices	Cases	BMAs	Related practices	Cases
Designing and developing new products, a new app, new web solutions, a new technological tool for boat safety checklist, and a new brand for the Norwegian market	Development of more efficient ways of doing business-Creating new partnerships-Market trend recognition	<i>Epsilon</i>	Sub-renting the office to decrease the fixed costs and applying the savings	Building slack financial resources- Resource transformation	<i>Zeta</i>
Performing digital site-visit filmed by the client instead of physical site-visit	Using and managing knowledge-Resource transformation-Market trend recognition	<i>Alpha</i>	Working on internal processes and efficiency	Development of more efficient ways of doing business	<i>Delta</i>
Providing and facilitating particular education about technology solutions for team members and the founder	Using and managing knowledge-New HR practice development-Creating new apps and web solutions	<i>Epsilon</i>	Adjusting the tourist segments to determine what kind of tourists to target	Market trend recognition-Resource transformation	<i>Alpha, Beta, Gamma, Eta & Delta</i>
Developing the storytelling product as an authentic tourism experience By relying on the historical connection between the region and Istanbul, planning to design and offer a new product	Using and managing knowledge-Creating new partnerships-Market trend recognition	<i>Alpha</i>	Making adjustments in prices	Market trend recognition-Resource transformation	<i>Epsilon, Beta & Delta</i>
Diversify the product portfolio by offering kayak and glacier courses, e-bike rentals, online photography, non-tourism products for the local market, and bucket list tourism.	Market trend recognition-Resource transformation-Creating new partnerships	<i>Delta, Epsilon & Zeta</i>	Assigning customers to the other tour operators to focus on new projects	Resource transformation-New HR practice development-Creating new partnerships	<i>Zeta</i>
prototyping and customizing new products in collaboration with other tour operators	Resource transformation- Creating new partnerships	<i>Alpha, Epsilon & Zeta</i>	Making adjustments in terms and conditions	Customer retention	<i>Epsilon, Zeta & Beta</i>
Arranging and offering vouchers instead of the cancellation fee	Customer retention-Building slack financial resources	<i>Beta</i>	Seeking local support from society to create a good impression of the region for guests	Building community embeddedness	<i>Delta</i>
Penetrating the local market by focusing on event management and offering the wilderness therapy course	Building community embeddedness-Creating new partnerships	<i>Gamma</i>			
launching a new online booking system	Creating new booking systems-New HR practice development-Development of more efficient ways of doing business	<i>Eta & Epsilon</i>			

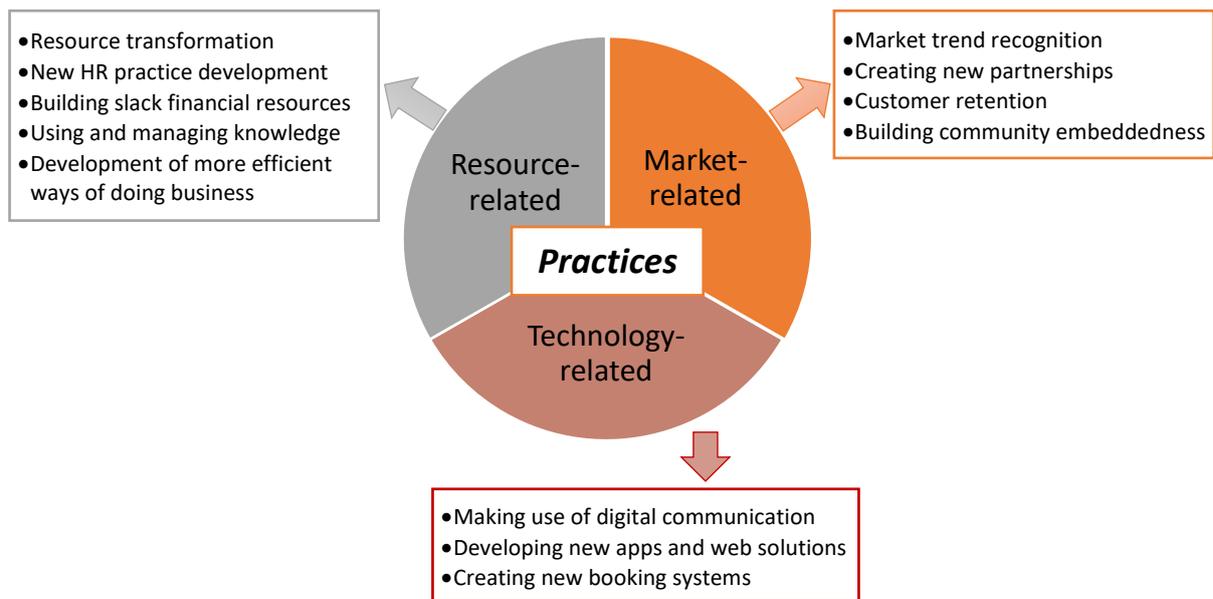


Figure 9: DC-based practices in three main groups

Four practices, including “new HR practices development”, “market trend recognition”, “customer retention” and “making use of digital communication”, inform adaptive DCs. The first is resource-related, the last is technology-related, and the two in the middle are market-related. As the findings demonstrate, BMIs are most likely generated due to the adoption of those practices that are technology and resource-oriented, while market-related practices mostly underlie BMAs (Table 14). This finding is supported by Kump et al. (2019), who state that knowing market trends and customer demands leads to the development of an adaptive DC, while it is contrasted by Mezger (2014), who argues that BMIs are explained through market-oriented practices. The findings indicate that the only exception in market-related practices is “creating new partnerships” that essentially informs BMIs and relies on a partners’ collective handling of the crisis. Relatedly, the literature (Becken and Hughey, 2013; Mezger, 2014; Battisti and Deakins, 2017; Jiang et al., 2021a) stresses the importance of cooperation and partnerships to integrate and coordinate external and internal resources to mitigate risks and innovate BMs.

In addition, the two resource-related practices of “development of more efficient ways of doing business” and “using and managing knowledge”, as well as the two technology-related practices of “developing new apps and web solutions” and “creating booking systems”, which arise from building innovative DCs set the stage for BMIs rather than BMAs. Given the crisis context, the practices that are focused on tourism knowledge management are essential in enabling innovative DCs, as Jiang et al. (2021a) describe them through the embedded local knowledge of managers and long-term personnel. Considering technological practices, past studies (Mezger, 2014; Inigo et al., 2017; Jiang et al., 2021c) underscore the importance of

digitalization and new technologies in creating competitive advantages and new BMs and attracting new customers.

Finally, based on the findings, the three practices of “resource transformation”, “building slack financial resources” and “building community embeddedness” that stem from adaptive-innovative DCs, give rise equally to both BMIs and BMAs. To recover faster and build resilience, community embeddedness and support (Jiang et al., 2021a), as well as resource transformation (Dahles and Susilowati, 2015), are particularly significant. Slack financial resources such as extra cash flow enhance the ability to change tourism products and services in times of crisis and compared to smaller companies, larger incumbents likely have more capital and savings as slack resources (Jiang et al., 2021a). Companies that have more slack resources and dedicated budgets are capable of seizing opportunities and thus can activate their DCs by transforming and building resilience (Chen et al., 2013; Bocken and Geradts, 2020; Duchek, 2020). Tourism companies with poor performance in building slack resources might respond to crises more reactively rather than proactively (Jiang et al., 2021b), whereas incumbents can be very conservative in making strategies, but simultaneously act more confidently (Jiang et al., 2021a).

Concerning the temporal aspects of evolution, the findings suggest that DCs and their underlying practices grow as experience is acquired through learning-by-doing. For instance, the two practices of “creating new partnerships” and “developing new apps and web solutions”, which are akin to innovative DCs, have been further launched during the COVID-19 crisis. The former practice is noted by *Alpha*, *Gamma*, *Epsilon*, *Zeta*, and *Eta* whereas the latter is advocated by *Epsilon*. This finding is important because even the incumbent (*Eta*) has gradually become fond of conducting innovative practices such as creating new partnerships and building slack resources through innovation funds. Likewise, Schilke et al. (2018) suggest that DCs tend to develop. As tourism companies have navigated through the crisis, they have realized that coping efficiently and building DCs require a wider range of resources than they possess. This means that they needed to broaden their networks to acquire resources from numerous partners and integrate them into their resources to develop the desired DCs (Jiang et al., 2021a).

However, the four practices of “resource transformation”, “new HR practices development”, “building slack financial resources”, and “using and managing knowledge” were induced early in the crisis and progressed further as the crisis continued. This finding clarifies how resilience in BMs has been built continuously over time as tourism companies gain experience and develop new adaptations to enhance their competitive advantages (Jiang et al., 2021b; 2021c).

In line with Jiang et al. (2021a), who claim that incumbents have better performance in building contingency savings and external grants, the findings suggest that the practice of building slack financial resources was first elaborated by *Eta* (the incumbent) and *Zeta* (one of the businesses in growth) basically through BMAs. Later in the crisis, this practice led to BMIs (e.g., applications for innovation grants) by *Eta*, *Zeta*, and *Epsilon*.

Thus, several innovations have emerged and been encouraged as companies have found more free time due to lagging tourism operations; thus, the idle capacity has been put to use in targeting innovations (by *Alpha*, *Beta*, *Gamma*, *Epsilon*, *Zeta*, and *Eta*). Notably, this finding denotes that whereas at the beginning of the crisis businesses were mostly focused on BMAs (e.g., *Beta*, *Zeta*, and *Eta*) as the crisis progressed, the changes mainly became radically geared toward BMIs. Comparatively, innovations are fostered over time unlike adjustments, which decreased over time. This likely happened because building innovative DCs requires time, as they have been formed as companies have gained experience. Consistently, Jiang et al. (2021c) examine the process of resilience building and relate crisis management (short-term) during a crisis to seizing DCs to increase adaptations versus transforming DCs to encourage innovations after crisis (long-term). Similarly, some recent studies (Breier et al., 2021; Kraus et al., 2020) suggest that BM changes during the crisis are focused more on temporary incremental changes to generate revenue in the short-term by adjusting day-to-day activities to enhance resilience (Duarte Alonso et al., 2020). Nonetheless, resilient organizations succeed in transformation by promptly tailoring their products to align with new market demands (Manolova et al., 2020; Seeler et al., 2021) because through trial-and-error over time, they have learned to change old practices and tackle new challenges due to crisis (Ortiz-de-Mandojana and Bansal, 2016).

Furthermore, the findings highlight that the five practices of “creating new partnerships”, “new HR practices development”, “market trend recognition”, “resource transformation”, and “making use of digital communication”, which mainly stem from building an adaptive DC are more widespread than others. This finding is consistent with Demil and Lecocq (2010), who state that continuous and incremental changes are more prevalent than drastic and radical changes. These practices are regarded as very critical by these cases, as they had to decrease their tourism activities in general and specifically concentrated on proximity and domestic tourism. Drawing on the tourism crisis management literature, Ritchie and Jiang (2019) conclude that companies mostly prioritize practices that are focused on recovery marketing, crisis communication, stakeholder collaborations, and the maintenance of basic operations to ensure effective recovery and minimize financial losses. Jiang et al. (2021b) also note that in a crisis context, tourism companies might modify their HR practices to perform more adaptively.

As such, an efficient response to crises is formed through more immediate adaptations by relocating personnel across various teams to ensure efficiency both during and after a crisis (Jiang et al., 2021a). Moreover, making use of digital communication as a new trend has forced companies to realize the application and benefits of such technology, although they may previously have been resistant to it (Kraus et al., 2020; Ritter and Pedersen, 2020).

5.3. Further elaborations on the results

5.3.1. Growth stage of companies

According to the findings of article 1, there is a lack of sufficient understanding in nature tourism BM research on the relationship between the extent of BM change and the growth stage of companies, i.e., start-up, business in growth, and incumbent. The findings of article 2 bridge this gap by revealing that larger companies in this study, whether incumbent (*Auro*), or businesses in growth (*Hunder, Øya, and Archart*), strive to ensure stronger embedded sustainability than the smallest (start-up) company (*Vegex*). In contrast to the study by Goffi et al. (2018), Font et al. (2016) claim that larger tourism firms engage in more sustainability practices than smaller ones, while Bonilla-Priego et al. (2021) describe such smaller companies as beginners that need external assistance.

In terms of BMIs, the findings of article 3 (Table 14) indicate that start-ups (*Alpha* and *Gamma*) perform better than the incumbent (*Eta*) and businesses in growth (*Zeta, Beta, and Delta*) and enact more limited BMIs than *Epsilon*. Whereas start-ups, in particular, cultivate innovative DCs, the incumbent company mainly focuses on BMAs. Companies in growth are also prone to pursue both BMIs and BMAs; while some engage in more innovative practices (*Epsilon* and *Beta*), others engage mostly in BMAs (*Delta* and *Zeta*). Nevertheless, the most radical BMIs are evidenced by *Epsilon*, which is a business in growth. This last finding regarding BMI is in line with Battisti and Deakins (2017); however, Jiang et al. (2021a) assert that incumbents are more proactive in conducting innovation during a crisis. Yet, incumbents are more experienced with crisis management due to exposure to past crises; for instance, *Eta* stressed the 2008 financial crisis and how during the recent pandemic they had to activate their acquired knowledge from the 2008 crisis. In a similar vein, recent literature (Cucculelli and Peruzzi, 2020; Jiang et al., 2021a) stresses the experience of companies with recessions and past natural disasters, which assist them in developing critical capabilities. Battisti and Deakins (2017) argue that although incumbents possess more valuable resources, their fixed organizational structure, and static BMs reduce their efficiency in adapting to crises and building resilience.

5.3.2. Various approaches to sustainability in tourism

Entrepreneurs¹⁵ were requested to reflect on whether they made trade-offs among sustainability principles to ensure resilience during the pandemic¹⁶ and they had different perceptions. For instance, *Alpha* pointed out that the pandemic necessitated people to relate to each other and nature in a new way. “People are becoming more awake that relates to how we can develop tourism because tourism shouldn’t be just about visiting somewhere... people want to travel and learn and become insightful, a more relevant trend ... having to think more ecologically sound...it is an opportunity for us to adjust how many and what kind of guests we want, and what kind of qualities we want to sell” (*Alpha*). He further criticized the number of flights that guests used to make to visit the Arctic and regarded the pre-COVID-19 business-as-usual approach as unsustainable. Additionally, he advocated a domestic market orientation by offering storytelling as an authentic tourism product to the Nordic and Norwegian markets. This finding, as evidenced by *Alpha*, implies a perspective change from **industry-based sustainability** with a focus on the international tourists’ needs to **community-based sustainability**, in which the well-being of society receives more attention. This is done through the designing of products that are closely tied to local history and culture (Saarinen, 2014; Saarinen and Gill, 2019; Høegh-Guldberg et al., 2022).

In contrast, *Beta*, *Eta*, and *Zeta* expected to return to what constituted a normal situation (business-as-usual) before the pandemic and to host international guests, although they confirmed that people flying long distances is not environmentally friendly. Therefore, their sustainability perspective leans toward **industry-based** thinking (Saarinen, 2014). Moreover, *Beta* stressed the pursuit of a carbon-neutral policy through which it contributed to an African solar power project focused on providing electricity and jobs for the nearby society. He further argued that their guests “mostly are nature hikers, have a certain awareness, so going carbon neutral is one more step toward the clients and giving them one more reason to book”. Given the environmental concerns, the approach that this entrepreneur used to follow informs **resource-based** and **community-based sustainability** through environmental and social value creation, respectively (Saarinen, 2014). Nonetheless, later during the pandemic, due to the significant reduction in rentals and, therefore, in kilometers driven, the amount that the company paid to the solar power project to neutralize CO₂ decreased considerably. This finding implies that the crisis led to an unintentional trade-off among sustainability principles.

¹⁵ In Article 3: Alpha, Beta, Gamma, Delta, Epsilon, Zeta & Eta

¹⁶ These findings are not included in article 3.

Likewise, *Delta* affirmed that “companies are disparate and when you are disparate, it is hard to sit on a high horse, ..., it might have made people say ‘yes’ to things that normally they wouldn’t; we don’t usually promote helicopter tours but if someone says that I want to land with a chopper for an accommodation, we can’t afford to say ‘no’... if you are not making money, you can’t be here next year and do anything for the environment sustainability”. Although the long-term sustainability goals did not change, the short-term goals of this company shifted mostly toward economic aspects. Similarly, *Epsilon* confirmed such trade-offs, as “there would be changes for sure, we all would have to do things that we didn’t do before to satisfy the needs of the travelers for the coming year”. However, given environmental sustainability globally, he concluded that “the nature and sustainability aspects definitely win her”. Additionally, *Zeta* raised the challenge of survival and stated that “becoming more focused on money, I am afraid; just try to make the company financially recover”. Drawing on these findings, it can be inferred that the crisis made these tourism companies focus on addressing the needs of the industry (*industry-based sustainability* by Saarinen (2014)) to financially recover and build resilience.

Notably, during the pandemic, *Eta* launched several projects both to certify the company (ecotourism certificate) and to expand and diversify the tourist experience by offering new product packages that relied on scientific knowledge and collaboration among several local tour operators. To do so, this company embarked on new partnerships with various researchers both nationally and internationally. This orientation can be explained by the pursuit of a *community-based sustainability* approach (Saarinen, 2014; Saarinen and Gill, 2019). Through the emphasis on personnel planning for the future, *Zeta* stressed stronger social aspects through the work environment provided for employees to prepare for grappling with similar adversities in the future and for avoiding a position in which “employees suddenly become without an income”. This finding reveals a stronger focus than before on the inclusion of employees’ interests, which is thus in concert with a *community-based* approach (Saarinen, 2014).

Furthermore, a future resilient tourism industry was portrayed through radical innovations (*Epsilon*), increased demand for more customized products (*Delta*), and food tourism (*Alpha*), assuming that mass tourism in large cities would be replaced with more sustainable traveling and nature tourism (*Gamma*, *Delta*, *Alpha*). The latter finding is also confirmed by the most recent statistical figures, which show a new trend: a drastic increase in nature tourism activities in Nordic countries (Fredman and Margaryan, 2021). Two informants (*Alpha* and *Epsilon*) also noted that the future trend toward more SBMs would be prominent and win out over the business-as-usual approach.

In summary, given the trade-offs among sustainability pillars, the informants representing three cases (*Delta*, *Zeta*, and *Epsilon*) claim that the COVID-19 crisis forced tourism companies to prioritize short-term financial goals over other aspects, as many small tour operators have been struggling to survive this downturn. This shift makes sense considering that the entire global economy was expected to shrink, which may affect the disposable income and economic well-being of travelers and, thus, demand and visitor behavior (Gössling et al, 2020). Drawing on short-term adaptations at the beginning of the crisis, whereas some altered their target customers from international to domestic tourists (*Alpha*, *Gamma*, *Epsilon*, and *Delta*), others chose to focus on planning for the upcoming seasons (*Beta*, *Zeta*, and *Eta*). Nonetheless, later during the crisis, the latter informants (*Beta*, *Zeta*, and *Eta*) changed their approach toward more innovative strategies by modifying their products for domestic tourists.

Furthermore, entrepreneurs mostly expected that many tourism companies would not survive and would declare bankruptcy. Thus, the competition and the number of active tour operators would decline drastically. For example, *Epsilon* maintained that such companies would declare bankruptcy anyway, and this eventuality was merely accelerated by this crisis. Therefore, the pandemic would ultimately leave the competitive landscape with opportunities for more sustainable development (*Epsilon*). “We have 250 active tourism companies in Tromsø and 700 in Troms county; there are a lot of businesses running with half-full buses and a lot of owners doing several jobs as accountant, guide, chef, driver, and photographer; this is not sustainable on the personnel level, it would be too much of hype, the tourism industry has grown very fast” (*Epsilon*). Similarly, the rapid growth of Arctic tourism before the crisis was criticized by other entrepreneurs (*Alpha*, *Zeta*, and *Gamma*) who stressed slow-paced growth as a positive side effect of this crisis compared to the previous normalized growth of Arctic tourism. That is referred to as unsustainable since organizations suffered from growing pains (*Gamma*) and efficiency loss due to rapid growth (*Epsilon*).

Therefore, the findings underline the slow-paced tourism growth known as ***degrowth***, a sustainability paradigm that is about right-sizing rather than downsizing by giving rise to the sustainable transformation of BMs (Kallis et al., 2012; Hall et al., 2015). This crisis can be viewed as “an involuntary degrowth experiment” (Schaltegger, 2020) and the degrowth approach has recently been embraced to address the issue of over-tourism (e.g., Mihalic, 2020). The pandemic has revealed the existing tensions in Arctic tourism in terms of growth (Benjamin et al., 2020), which may alter the pursuit of unregulated growth strategies for diverse destinations during the past several decades (Ioannides and Gyimóthy, 2020). The current slow-paced growth, which was referred to by several cases as a positive side effect of this adversity,

could be considered in the future planning and development of Arctic destinations to minimize the negative impacts on nature and to ensure community well-being. In addition to the degrowth of the Arctic tourism in general, all the cases showed this approach through partial hibernation and a significant reduction in usual tourism activities (related to international arrivals).

Moreover, degrowth is closely linked to establishing community-based collaborations and involvement (Fletcher et al., 2019; Sørensen and Grindsted, 2021). Interestingly, the findings at two stages during the crisis demonstrate an increased focus among the cases on working toward social value creation. Such work has occurred through the inclusion of community stakeholders, i.e., regional tour operators, Innovation Norway, destination management organizations, research institutes, local researchers, and the needs of domestic guests. This trend is more evident later during the crisis. For instance, two practices, “creating new partnerships”, and “developing a new app” for the local market, are part of the element of society involvement and rebuilding community ties (Dybdahl, 2019) and have emerged later, as suggested by the second data collection round. Two other practices, “building community embeddedness” and “market trend recognition”, also rely on addressing the interests of community members and the co-creation of value. Similarly, recent tourism (Saarinen, 2019; Saarinen and Gill, 2019), nature tourism (Sørensen and Grindsted, 2020; 2021), and Arctic tourism (Rantala et al., 2019) research, as well as crisis tourism research (Sharma et al., 2021; Soares et al., 2021), especially in a nature-based contexts (King et al., 2021), underline the critical role of community engagement and community-based tourism in building resilience. Furthermore, the new approach of companies here resonates with the SBM archetype: re-purposing the business for society (Bocken et al. 2014), and Dybdahl (2019) calls this approach the “localism” strategy to develop a BMfS.

Relatedly, as the findings of article 1 suggest, the existing nature tourism literature, which addresses sustainability, mostly advocates a community-based approach to enhance resilience, create social value and contribute to sustainable tourism development (Peric and Djurkin, 2014; Sarkar and Sinha, 2015; Torquati et al., 2015; Cannas, 2016; Di Gregorio, 2017). However, no studies have examined resilience and sustainability in a crisis context.

For instance, by exploring rural agritourism, Di Gregorio (2017) stresses the element of a “sense of place” (p.113), which relies on unique local resources and gives rise to resilience through place-based BMs and local community embeddedness. In another rural agritourism study, to boost social benefits, Torquati et al. (2015) extend the usual customer segment from rural tourists and local people to children and disabled people, who need environmental education

and particular services (social benefits). Given a former mine complex as a present cultural heritage site, Cannas (2016) regards this heritage as a source of community culture and knowledge to underpin new BMs to restore community resilience and create value for local stakeholders. In another study on poor rural ecotourism, Sarkar and Sinha (2015) shed light on the challenge of the trade-offs involved in balancing local livelihoods and nature conservation, as well as building community resilience in exchange for “sharper” trade-offs in favor of social value creation. Finally, Peric and Djurkin (2014) argue that the benefits of community-based tourism business for local prosperity can go beyond inspiring new enterprise creation and employment by encouraging an increased budgetary allocation to municipalities to enhance investments in community well-being. These studies primarily emphasize community-based tourism as a means of creating social value and embedding community stakeholders. Therefore, compared to social aspects, environmental aspects have received less attention.

5.4. Theoretical contributions

Earlier in this chapter, the overall findings of this thesis were discussed concerning the research question, the three articles, the data not being published elsewhere, and the current body of knowledge. Here, I elaborate on the novel theoretical contributions of this research. This thesis mainly contributes to the research field of BMI for sustainability by adopting BMs as a dynamic tool and offering a systematic and comprehensive explanation of the relevant drivers and DCs underlying BM change to demonstrate how changes take place (Saebi, 2015; Foss and Saebi, 2017; Snihur and Zott, 2020; Zhang et al., 2021).

Namely, the results contribute to the current body of knowledge in terms of uncovering key drivers and enablers of BM change to delineate how BMs are stimulated toward sustainability and undergo change. Past studies have emphasized such noteworthy gaps in BMI literature with respect to empirically based theorizing in both tourism and management disciplines (Foss and Saebi, 2015, 2017; Reinhold et al., 2017; Saebi et al., 2017; Snihur and Zott, 2020; Zhang et al., 2021). This thesis differentiates drivers and DCs and views them as closely linked factors that give rise to BM change for sustainability. Regarding tourism BMI research, the overall results contribute new knowledge to this research field (Souto, 2015; Brannon and Wiklund, 2016; Broccardo et al., 2017; Coles et al., 2017; Cheah et al., 2018; Breier et al., 2021) by adopting the concept of BM as a dynamic tool to address innovations and adaptations. In addition, the results provide new insight into other related streams of literature, such as corporate sustainability, DCs, drivers of sustainability and innovation, and tourism resilience.

Given the research on drivers, the existing literature is primarily focused on identifying internal and external drivers (Zollo et al., 2013; Bossle et al., 2016; Stampfl, 2016; Andreini and Bettinelli, 2017; Foss and Saebi, 2017; Rauter et al., 2017; Miras-Rodriguez et al., 2018) as well as sustainability motivations and innovation drivers in tourism (Garay and Font, 2012; Sampaio et al., 2012; Font et al., 2016; Hoarau-Heemstra and Eide, 2016; Kallmuenzer et al., 2018; Bonilla-Priego et al., 2021). Past tourism literature basically concentrated on responsible and sustainable practices and overlooked the overall logic that a BM can potentially inform. My research contributes new knowledge by deepening the understanding of prior driver typologies in two aspects. First, by unraveling how each driver is operationalized to explain the minimum necessities underpinning a BMfS (Breuer et al., 2018). Second, by identifying four internal and six external drivers, it provides an understanding of the particular drivers that dominate nature tourism BMs striving toward environmental and social sustainability.

Relatedly, my research enriches the prior typologies of corporate sustainability (Dyllick and Muff, 2016; Landrum, 2018) and the sustainability innovation paradigm (Ritala, 2019). This is done by incorporating a dynamic perspective on BMs and differentiating BMs in terms of the most influential internal and external drivers, the relevant ontologies underpinning sustainability innovations (skepticism, pragmatism, and idealism), and the sustainability approach (weak versus strong). Additionally, this research argues that corporate sustainability is a broad and holistic concept. As such, the findings contribute to the corporate sustainability field by elucidating various aspects of sustainability with reference to a proper balance among the Triple Bottom Lines and the pursuit of a dynamic logic in addressing resilience and building a sustainable competitive advantage (Ortiz-de-Mandojana and Bansal, 2016).

Moreover, this research refines and extends the DCs theory (Teece, 2007, 2018) by responding to the call to bridge the gap in the tourism crisis literature on relevant DCs, which enable adaptations and innovations to enhance resilience (Jiang et al., 2019; Jiang et al., 2021b). By adopting the BM concept as a critical interdependent construct in addressing DCs (Leih et al., 2015; Teece, 2018), my research comprehensively investigates crisis-related DCs concerning both their nature (innovative, adaptive, or adaptive-innovative), and their underlying practices (Leih et al., 2015; Saebi, 2015; Jiang et al., 2021b). Accordingly, my research provides practical insights into how DCs are empirically operationalized to change BMs either incrementally or radically (Mezger, 2014; Leih et al., 2015; Saebi, 2015; Inigo et al., 2017; Teece, 2018).

Thus, the results contribute new insights into tourism crisis literature (Hall et al., 2017; Jiang et al., 2019, 2021a, 2021b, 2021c; Mansour et al., 2019; Sigala, 2020; Breier et al., 2021) on the

process of building resilience by deliberately innovating BMs by cultivating DCs. This literature has basically focused on destination-level crisis preparedness; hence, a lack of practical knowledge about small firm-level crisis management persists (Seeler et al., 2021). Given the crisis environment, tourism scholars have recently become increasingly interested in implementing DC theory to address adaptations (Mansour et al., 2019; Jiang et al., 2019, 2021a, 2021b, 2021c). However, the literature has far addressed DCs only limitedly by identifying some general capabilities (Mansour et al., 2019) or a resource-based DCs typology (Jiang et al., 2021) without embracing the concept of BM.

More importantly, this research argues that BMs, DCs and resilience are dynamic and not static by nature; therefore, they tend to evolve as companies gain experience. Relying on the dynamic perspective (Eriksson, 2014; Hall et al., 2017; Schilke et al., 2018; Pieroni et al., 2019; Jiang et al., 2021b, 2021c), the results offer a more thorough understanding by revealing the temporal aspects of DCs and BMIs. The current state of research on resilience mostly addresses this concept from a static perspective where resilience is assessed as an outcome postcrisis. Hence, this research intends to fill this gap (Ortiz-de-Mandojana and Bansal, 2016; Linnenluecke, 2017; Duchek, 2020; Jiang et al., 2021c) by contributing a proper understanding of the continuous development of resilience in the face of crisis. In other words, by examining the temporal aspect of BMIs, this thesis extends the prior knowledge of BMIs as a process of learning over time (Pieroni et al., 2019).

This thesis also sheds light on existing nature tourism literature in terms of the conceptualization and operationalization of BMs with reference to innovation and sustainability and extends previous systematic literature reviews on tourism BMs (Reinhold et al., 2017; 2018). Reinhold and colleagues discussed tourism BMs in general; thus, the particular case of nature tourism and conceptualization of innovation and sustainability were probed only sparsely. In addition to responding to the call by Reinhold et al. (2017) regarding the lack of a clear conceptualization of tourism BMs relative to the more advanced BM theorization in the management field, by synthesizing the extant literature, this research revealed knowledge gaps that set the stage for more robust contributions in nature tourism BM research. Finally, this thesis offers insight into the relationship between the development stage of tourism companies, and the extent of BM change and sustainability engagement through studying various BMs (Font et al., 2016; Battisti and Deakins, 2017; Bonilla-Priego et al., 2021; Jiang et al., 2021a).

5.5. Limitations and future research avenues

Despite the new knowledge, this thesis contributes to the literature, it is subject to some limitations that should be acknowledged. Here, my aim is to discuss some general shortcomings in addition to the limitations presented in the articles. In addition, I reflect on a limitation regarding the data, which have not been published elsewhere and appear for the first time in this thesis. First, to conduct the research, I followed a firm-level perspective. To embed sustainability into BMs to ensure an effective contribution to the sustainability of communities and the economy (Dyllick and Muff, 2016), the pursuit of systemic thinking by focusing on interactions among multiple actors is necessary (Joyce and Paquin, 2016; Breuer et al., 2018). Future studies can go beyond organizational boundaries to capture the complexity of BMIs for sustainability (Bocken and Geradts, 2020), an avenue that is still in its infancy in the tourism literature (Reinhold et al., 2017, 2018, 2019; Breier et al., 2021). Importantly, corporate sustainability and sustainable tourism are rather complex, as multiple stakeholders are involved, and all stakeholders should change their attitudes to collectively solve sustainability issues (Hörisch et al., 2014; Truong and Hall, 2015; Schaltegger et al., 2017).

Hence, it may be valuable to concentrate on system-level value creation. For this purpose, stakeholder theory can be applied to investigate interactions between a firm and its stakeholders to examine the balance among the involved parties' interests and clarify stakeholders' contributions to sustainable value creation. The unit of analysis is then relationships and interactions instead of firms, as stakeholder theory focuses on the analysis of relationships between a firm and its stakeholders (Freeman et al., 2010), and sustainable value creation concerns cooperation across a network of diverse stakeholders that have mutual relationships with a firm (Freudenreich et al., 2020). Future researchers might investigate the interests of various stakeholders including customers, financial partners, societal stakeholders, and nature, across three levels: micro (local), meso (national), and macro (global). Prior research mostly concentrates on either the stakeholders involved in value creation or those that receive value; however, value exchange has rarely been investigated (Freudenreich et al., 2020).

Second, this thesis has investigated and differentiated drivers and DCs independently; the drivers were linked to the alignment among sustainability principles, while DCs informed enhancing resilience. I argue that crisis, as an external driver (issue), stimulates the development of a firm's DCs; nonetheless, I did not study DCs, which might be critical in incorporating social and environmental aspects into BMs (Inigo et al., 2017; Bocken and Geradts, 2020). Another avenue for future researchers can be identifying the relevant DCs and their underlying

practices for various purposes. Third, given BMI and the application of a firm's DCs in a crisis context, relying on internal resources and competencies is insufficient; thus, companies need to integrate external resources into their internal resources (community-based approach) (Battisti and Deakins, 2017; Jiang et al., 2021a; 2021b). Although some of the identified entrepreneurial practices are aimed at explaining such integration, it is worth noting that future studies can provide further explanation by more critically emphasizing this integration in terms of enablers and barriers (Bocken and Geradts, 2020; Jiang et al., 2021a).

Fourth, this study strived to illuminate the matters of sustainability in terms of Triple Bottom Line alignment and resilience separately; however, it did not examine the relationship between resilience and sustainability principles at the firm level. Research is always affected by the choices a researcher makes; thus, I did not study the performance of companies both before and during the crisis because the participants were different each time. This gap leaves room for future studies to scrutinize such relationships to see whether companies with stronger concerns regarding sustainability issues perform more innovatively in the face of a crisis or whether more innovative and resilient BMs during the crisis are more capable of sustainable value creation postcrisis. Such an approach can be better justified by adopting crisis phase models and processes (Ritchie, 2008; Duchek, 2020; Jiang et al., 2021c) to shed light on the relationships at different stages, i.e., before, during and after a crisis. Furthermore, Ortiz-de-Mandojana and Bansal (2016) suggest that firms that engage in more sustainability practices have higher survival rates and long-term growth but lower profitability in the short term. Sampaio et al. (2012) also advocate that resilient tourism companies are more willing than other companies to engage in learning-by-doing and thus more likely to engage in sustainability practices by setting more challenging and unknown goals.

Relatedly, various sustainability approaches (trade-offs) to ensure short-term survival and build resilience are discussed in the thesis based on the limited data, which were collected at the beginning of the pandemic (first interview round) and not published elsewhere. To further explore the transformation of sustainability traits, further data collection was not carried out because I chose to focus on the development of DCs and BMIs in the second interview round. This gap can inspire future studies to extensively investigate such trade-offs and traits given various crisis stages, i.e., before, during, and after a crisis (Jiang et al., 2021c).

Fifth, this research argued that the concept of BM, sustainability, and resilience are dynamic over time; however, longitudinal data were collected in one article; thus, it can be useful to study the processes through which BMs evolve to incorporate social and environmental aspects.

Finally, given the methodological aspects, this work relied mainly on qualitative data, which can limit the generalizability of the findings to broader contexts; thus, future researchers are encouraged to investigate and quantitatively test the research findings, especially with reference to BMIs for sustainability, which is still a young field in the exploration stage (Bocken and Geradts, 2020). Concerning transferability, the relevance of findings in contexts other than nature tourism requires further exploration because both the number of cases and the diversity of data sources (i.e., secondary data) were inadequate and limited in study 2. In addition, the cases for both empirical studies were selected from Arctic Norway, which might have particular regulations, contingencies, locations, cultures, natural habitats, nature tourism types, and demographic measures.

5.6. Implications for practice

This research has several implications for tourism companies. The concept of sustainability is complex and subject to much debate, as it can be interpreted by companies quite differently based on the personal values of the owners. In nature tourism, as this research understood, very small companies dominate the sector and mostly integrate sustainability into business terms limitedly based on their preferences and sometimes by conducting very basic environmental and social practices. Given the driving factors and motivations identified here, the research findings can be applied to enhance tourism entrepreneurs' understanding of the underpinnings of BMs that are aimed at incorporating sustainability principles. Focusing on the four principles of SBMs (Breuer et al., 2018) with reference to various underlying driving factors, managers can strive to reach the minimum requirements of a BMfS by taking various drivers into consideration. Considering that managers have the most decisive role in transforming BMs and can decide upon and allow for different factors to lead them toward social and environmental value creation.

As the results suggest, the BMs that are realized truly sustainable compared to others, are driven and stimulated by a wide range of drivers, and they proactively seek to embrace drivers to create sustainable value. Unlike large and established organizations, small tourism companies' journeys toward sustainability are gradual (Font et al., 2016). Using the suggested sustainability continuum, companies can evaluate their BMs with regard to their engagement and sustainability embeddedness to improve and move along the continuum by practicing strong sustainability, a proactive approach, and idealistic innovations for sustainability (Ritala, 2019). Relevant organizations both regionally and globally are required to empower small tourism companies as catalysts and enablers of a more proactive and stronger approach to sustainability

issues because small tourism companies may lack proactive abilities due to their pursuit of short-termism, which is incompatible with the long-term aspect of sustainability.

Additionally, the path to developing BMs that are more sustainable passes through continuous change and requires a proper understanding of organizational resilience as well as sustainability integration into BMs with its relevance at the firm level. Given this continuous change and resilience enhancement, the findings emphasize the critical role of DCs in enabling companies to carry out BM changes. To build DCs and foster resilience, tourism companies should consider actively engaging with other businesses and partners to ensure new and relevant partnerships with like-minded entrepreneurs to collectively tackle the crises (community-based approach). Adapting BMs to a crisis situation requires integrating external resources into internal resources, as the current resource base of companies is sometimes insufficient to survive the crisis and actively innovate BMs. Moreover, a collective tackling of crises by creating new partnerships can lead to the synergy among those who proactively work to enhance their resilience. By proactively building innovative DCs even on a low scale by implementing a few relevant practices, tourism companies can create BMIs. In addition, by implementing technology- and resource-related, practices, companies can boost BMIs more than they can with market-related practices, which mainly lead to adjustments in BMs. For instance, by developing new, efficient ways of doing business, managing, and applying knowledge as well as creating new booking systems, apps and web solutions, tourism companies have made radical changes within their BMs during the COVID-19 crisis.

DC-based practices, as this research demonstrated, mostly yield both adaptations and innovations; nonetheless, the way companies choose to carry out practices specifies the degree of change BMs undergo, be it incremental or radical. Relying on such findings, tourism entrepreneurs can benefit from relevant practices to achieve their desired results. As the literature suggests (Bocken et al., 2014; Doern et al., 2019), to alleviate the negative impacts of a crisis and contribute to sustainable value creation, a new approach to conducting business is necessary, as business-as-usual is impractical. In addition, cultivating innovative DCs is a complex task and requires that companies invest time in finding new ways of value creation by making new partnerships, building new slack financial resources, being efficient in doing business processes, and implementing new relevant technologies. For that reason, the most radical BM changes were identified by this research later on in the crisis and not at the beginning when companies were mostly focused on modifications to their BMs. Although BMAs enhance resilience among tourism companies, this research encourages tourism entrepreneurs to move

beyond incremental adaptations and engage more dedicatedly with continuous and radical changes to their BMs.

Resilience, as a key element of sustainability, is argued to be a dynamic concept (Jiang et al., 2021c), meaning that resilient organizations under a crisis might not promise the same performance and remain resilient during future crises. As such, it is crucial to focus on continuous change aligned with the business environment because after companies overcome a crisis, they may appear to be in the precrisis phase where planning and strategizing for preparedness is mandatory. Drawing on prior studies on past crises, the importance of interventions and relevant policies are emphasized to endure future crises and enhance resilience (Keogh-Brown and Smith, 2008; Blackman et al., 2011). Governmental support arrangements, both monetary and nonmonetary, are crucial in times of crisis to revive small companies and contribute to sustainable tourism development (Sobaih et al., 2021). Governmental organizations can support companies through more practical crisis packages and guidance in achieving the required competencies to exploit new opportunities, move toward more sustainable tourism, and develop innovation capabilities, as the informants in article 3 believed that Arctic tourism is still far from innovative.

The results further highlight the importance of domestic or proximity tourism, which was neglected before the COVID-19 crisis. As highlighted by Seeler et al. (2021), among Norwegian destinations, Arctic regions experienced a more severe decline in tourism activities due to the high dependence on international arrivals, as these destinations are peripheral and thus less accessible to domestic visitors. Moreover, these small companies mainly offer nature-based activities that were originally designed for international visitors. It can be concluded that innovations in value propositions are even more essential for reviving Arctic tourism companies, which can contribute to the resilience and sustainability of these regions by ensuring job opportunities and providing new tourism activities that are of interest to local and domestic guests. Such a turn requires that companies reorient their focus by dynamically renewing their competencies and reconfiguring their resource base to become capable of conducting BMIs.

6. References

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PART II
APPENDED ARTICLES

Article 1: Publication in Sustainability

Sahebalzamani, S.; Bertella, G. (2018). Business Models and Sustainability in Nature Tourism: A Systematic Review of the Literature. *Sustainability* 2018, 10, 3226. DOI: 10.3390/su10093226.

Business Models and Sustainability in Nature Tourism: A Systematic Review of the Literature

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Abstract: This study explores the business model literature within nature tourism, focuses on its sustainability-related aspects, and adopts some of the results of the literature review by Reinhold et al. The research questions concern how scholars use and operationalize the business model concept in the context of nature tourism, and to what extent sustainability-related aspects are included and discussed. A literature review was conducted including a total of 18 scientific articles from various disciplines. The findings suggest that scientific literature about business models in nature tourism is very limited, both in relation to the number of articles and their content. With regard to the latter, the business model concept is sometimes adopted without any clear definition, sustainability-related aspects—especially those relative to the environmental dimension—are scarcely discussed, the perspective adopted is usually static, and innovation for sustainability is only marginally included. This indicates a clear gap in the literature and a considerable potential for future studies.

Keywords: business models; nature tourism; sustainability

1. Introduction

This study presents a literature review concerning the understanding and operationalization of the business model concept in nature tourism, with particular focus on the extent and the way that this concept is discussed in relation to sustainability-related aspects.

The business model concept is broadly adopted by business and management scholars as a strategic construct delineating the underlying logic through which value can be created and captured [2,3]. Some scholars explicitly relate this concept to sustainability [4,5], which can be described with reference to the “triple bottom line” short- and long-term impacts: economic, social, and environmental benefits and risks [6,7]. The importance of the inclusion of sustainability in relation to business models derives from the limitations that other approaches, for example corporate social responsibility, seem to have in the creation of the needed radical transformation of organizations and industries [8].

It is only recently that some scholars have adopted the business model concept in tourism and the literature is scant in regard to sustainable business models therein [1,9]. This study aims to contribute to such literature focusing on nature tourism, a form of tourism where sustainability-related impacts have concerned several scholars [10–13]. For the purpose of the study, nature tourism is understood in a broad way, comprising all forms of tourism centered on activities performed in wild nature as well as in more domesticated nature, including, for instance, adventure tourism, wildlife tourism, and rural tourism [14,15].

This study’s underlying assumption is that business models are potentially relevant strategic management tools for sustainability [16]. Based on such considerations, this study conducts a literature review posing the following questions. How is the business model concept used and

operationalized within scientific articles about nature tourism? To what extent and how do these articles include and discuss sustainability-related aspects?

This paper begins with presenting the theoretical concepts on which the literature review is based. The method for conducting the literature review is then described, followed by presentation of the findings and their discussion. The conclusion highlights the main results and indicates directions for future nature tourism studies.

2. Business Models, Sustainability, and Nature Tourism

2.1. The Business Model Concept

The business model concept became popular in the 1990s to describe how new kinds of businesses, such as online content providers and web services, emerged and became profitable [17]. One of the most accepted business model definitions is by Teece (2010) [18], which refers to a business model as the way an enterprise, explicitly or implicitly, understands and describes the design of the value creation, delivery, and capture mechanisms. More precisely, the author defines the essence of a business model as “the manner by which the enterprise delivers value to customers, entices customers to pay for value, and converts those payments to profit” [18] (p. 172). In other words, the business model carries “implicit assumptions” about customers, cost structures, revenue flows, competitors’ behavior, and shifts in user needs, and ultimately, the way in which the firm “goes to market” [18].

While Teece (2010) [18] describes business models referring to three value related processes – “value proposition”, “value creation”, and “value capture” – some scholars have developed rather detailed analytical frameworks. Among these, the business model Canvas is broadly applied by both scholars and practitioners due to its holistic approach and flexibility. It permits businesses to obtain an analytic overview based on nine main components: “value proposition”, “key activities”, “key resources”, “customer relationship”, “channels”, “key partners”, “customer segments”, “cost structure”, and “revenue streams” [19,20]. A selection of these components is also included in other frameworks, such as those by Boons and Lüdeke-Freund (2013) [21], Afuah (2014) [22], and Wirtz et al. (2016) [23].

It has been emphasized that the business model can play a crucial role in a firm’s strategy by bridging strategy formulation and implementation, since the business model explains how the activities of the firm operate together to carry out its strategy [24]. Moreover, business models are studied as potential tools at various levels, from product, to business unit, company, and industry [4].

In line with the broader business and management literature, within the recent business model literature it is highlighted that value creation is not to be viewed exclusively in terms of financial success related to revenue and sales, but as a collaborative process among firms and various stakeholders, via informal and/or formal channels, aiming to achieve benefits beyond firm profitability [8,25]. Another focus of the recent literature is the adoption of a dynamic perspective whereby business model innovation and transformation are viewed as critically important elements [26,27]. The debate regarding sustainable business models can be inserted in this context.

2.2. Sustainable Business Models

Some business model scholars argue that in order to contribute to sustainable development, organizations need to reconsider their business models [5,28,29]. The concepts of sustainability and sustainable development date back to the end of the 1980s; since then, several scholars from various disciplines have investigated these concepts in an attempt to clarify their meaning and application and highlight their related strengths and weaknesses [7,30,31]. Sustainable development was defined in 1987 as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” [6] (p. 41). The present and future generations’ needs are usually described with reference to the “triple bottom line”, a perspective that includes economic,

environmental, and social factors [7]. This perspective is adopted broadly, either implicitly or explicitly, by firms because it refers to the concept of sustainability in a relatively simple and clear way [32]. Sustainability has been also commented on in terms of conducting innovation and change in order to cope with the environment in which companies are operating [33].

Along with the socioeconomic and environmental factors relating to business models, innovation is a relevant aspect within business models that aim for sustainability. Business model innovation (BMI) is discussed in the literature as a tool through which sustainability can be integrated into the business [28,33–37]. An example of this dynamic perspective is the classification by Cavalcante et al. (2011) [34] that defines four types of change related to business models: business model creation (conceptualization of a new business model), business model extension (expanding the business but keeping the key processes of the existing one), business model revision (replacing the business model with a new one), and business model termination (relinquishing the existing business model).

This dynamic perspective can be commented by referring to two types of sustainability: strong and weak. Strong sustainability can be associated with radical change, and it focuses on the complete integration of sustainability within the core processes of the business. Weak sustainability concerns incremental changes and the adaption of some activities, which leads to partial transformation aimed at achieving a sustainable business model [5]. Boons et al. (2013) [35] argue that incremental changes towards weak sustainability are not enough when it comes to contributing to sustainable development; thus, business transformation must go farther.

2.3. Sustainable Business Models in Tourism

Reinhold et al. (2017) [1] conducted a literature review of scholarly articles making explicit use of the business model concept in tourism and analyzed a total of 28 articles. The authors identify the following main themes: sector-specific configurations (tourism and hospitality, transportation, and e-commerce); the role of different value types; design themes for consistency; and regulatory contingencies. Sustainability as a popular concept is debated in the tourism literature in relation to both potential and challenges [30,31,38,39]; they are discussed within each of the main themes identified by Reinhold et al. (2017) [1].

As presented by Reinhold et al. (2017) [1] within the first identified theme, some scholars have challenged the idea of integrating the sustainability aspect in destination business model design and in hospitality management practices [40–44]. Within the second theme concerning value types, sustainability-related considerations in tourism tend to be focused on the benefits the local residents can gain from different business models [41,43–46]. Sustainability is a major topic within the third theme, design for consistency. Here, hospitality business models [41,42], ecotourism [43], and wine tourism business models [47] are discussed together with destination offerings [43]. Sustainability also appears in the theme related to regulations and refers to lodging firms [48,49].

Based on these considerations, this study conducts a literature review focused on nature tourism, investigating how the concept of the business model is used and operationalized by scholars, particularly in relation to environmental, social, and economic sustainability. Moreover, the sustainability aspect is also included in this study in relation to innovation. Innovation is identified by several tourism studies as being relevant to sustainability [50–52]. For example, Gössling et al. [51] assert that “sustainability itself was, and arguably still is, an innovative idea” [51] (p. 5). Hjalager (2010) [52] identifies the following types of innovation within tourism sector: product/service; process; management; managerial (marketing); and institutional. Institutional innovation is defined as a “collaborative/organizational structure or legal framework that efficiently redirects or enhances the business” [52] (p. 3) and may “constitute more widespread changes” [52] (p. 4). If fully embraced, sustainable business models can constitute a form of institutional innovation that can contribute to strong sustainable goals.

It has been observed that the tourism studies concerning sustainable business models elaborate more on economic rather than social and environmental sustainability, and the concept of the environmental value proposition is neglected [9,13]. In a literature review by Reinhold et al. (2017)

[1], only a minority (five) of the selected studies contribute to nature tourism [43,44,47,53,54] and merely two out of these studies address sustainability aspects [43,44]. This indicates a gap in the literature that is particularly problematic, because nature tourism is often discussed in relation to sustainability [10–12], due to its dependence on the natural environment (environmental challenges) and its setting sometimes characterized by vulnerable social contexts such as those of rural and peripheral areas (social challenges) [55].

3. Methods

A literature review is a distinctive form of research that aims to create new knowledge about a specific topic using existing literature that covers this topic [56]. Literature reviews can facilitate theory development, and thus contribute to closing possible gaps and revealing areas where further research is needed [57]. The present literature review is performed systematically following the phases described below [58], starting from the research questions:

- RQ1: How is the business model concept used and operationalized within scientific articles about nature tourism?
- RQ2: To what extent and how do these articles include and discuss sustainability-related aspects?

The first question is suggested by Reinhold et al. (2017) [1] among the conclusions derived from their literature review about business models in tourism, and refers to one of the main directions for a future research agenda. The second question indicates this study's focus on sustainability as a relevant aspect of the investigated form of tourism, and on innovation as a critically important factor.

This literature review is conducted following the phases identified in Seuring and Muller (2008) [59] on the basis of Mayring (2000) [60]. The articles included in the review were collected and delimited. In this phase, nature tourism studies were selected using two databases broadly used and recognized as reliable within the international scientific community: ISI Web of Science and ProQuest. The time range for the analysis was January 2000 to November 2017. This time range was chosen as the result of a preliminary search including publications from 1990 showing no match for the research criteria.

The search words used in this selection were “business model”, tourism, and sustain (which can include both the words sustainability and sustainable). The search words were considered relevant when appearing in the title and/or the abstract and/or the list of keywords. One selection criterion was that the terms “business model” and tourism were both present.

The keyword search “business model” was written with quotation marks, since we aimed to find the exact phrase; otherwise, the research result might also include inquiries addressing either the word business or the word model, which could not satisfy our criteria. By exploring these two databases, we obtained 249 articles. The review process is demonstrated in Figure 1. As shown in Figure 1, the total number of 231 articles was considerably reduced. This was done due to several reasons:

1. Fifty-six articles were present in both databases;
2. In 66 articles the business model concept was used marginally and was only loosely related to the context;
3. For 18 of the remaining articles, there was no access to the full text because they were conference proceedings;
4. In 91 of the remaining articles there was no focus on nature tourism.

Through this selection process, 18 articles were identified as being relevant for in-depth analysis. These 18 articles are described in relation to relevant aspects. They are presented in detail in the first part of following section, both graphically (Table 1) and in the text.

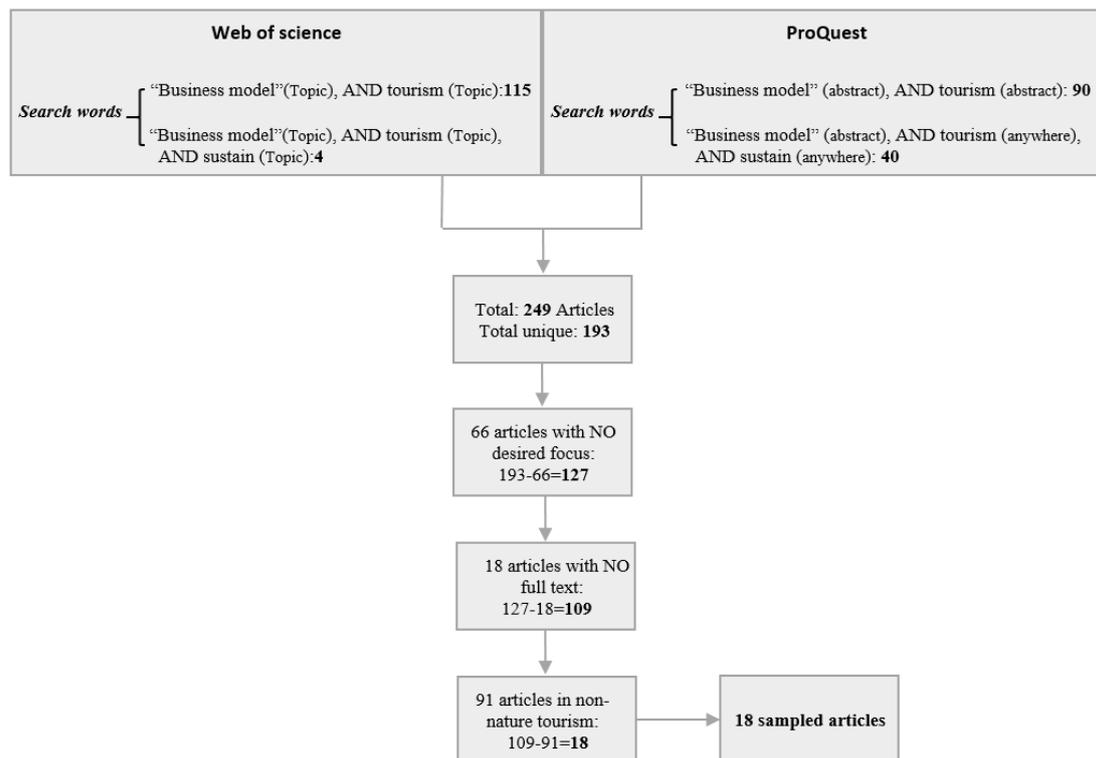


Figure 1. Systematic literature review (2000–1 November 2017).

The following phase concerned the analysis of the 18 selected articles using categories and subcategories related to the two research questions and identified as relevant on the basis of the business model and sustainable tourism literature presented previously. The categories and subcategories are:

- Conceptualization and operationalization: business model as a descriptive tool/positivistic approach; as a cognitive schema/constructive approach, and as a conceptual tool/predefined framework.
- Sustainability-related aspects: economic, social, environmental impacts, and innovation for sustainability.

This analysis is presented both graphically (Table 2) and in the text in the second part of the following section.

4. Literature on Business Models and Sustainability in Nature Tourism

4.1. Overview of Reviewed Literature

As mentioned above, 18 articles were selected. They were published under different disciplines which we categorize into five groups as they were published in different journals belonging to five different fields of studies, more specifically:

1. Business, Management and Marketing (five articles) in the journals *Sport, Business and Management: An International Journal* [61], *Journal of Enterprising Communities: People and Places in the Global Economy* [62], *Academy of Entrepreneurship Journal* [63], *Local Economy* [64], and *Journal of Business Research* [47].
2. Environmental Management (four articles) in the journals *Sustainability* [65], *Journal of Cleaner Production* [44], *Agricultural and Food Economics* [66], and *Journal of Sustainable Forestry* [67].
3. Tourism (four articles) in the journals, *Journal of Tourism, Culture, and Territorial Development* [68], *Tourism* [69], *Tourism Management Perspectives* [43], and *International Journal of Tourism Research* [53].

4. Information and Technology Management (four articles) in the journals, *Interdisciplinary Studies Journal* [70], *Idimt-2015: Information Technology and Society Interaction and Interdependence* [71], *Kybernetes* [72], and *International Journal of Information Technology and Management* [73].
5. Social Science (1 article) in the journal *Social and Behavioral Sciences* [54].

Figure 2 illustrates the number and the year of publications of the selected articles. As shown in Figure 2, 2009 is the first year in which there some (two) publications that fulfill our research criteria. It can be noted that, two third of the selected articles have been published in the most recent years, precisely 2015, 2016, and 2017.

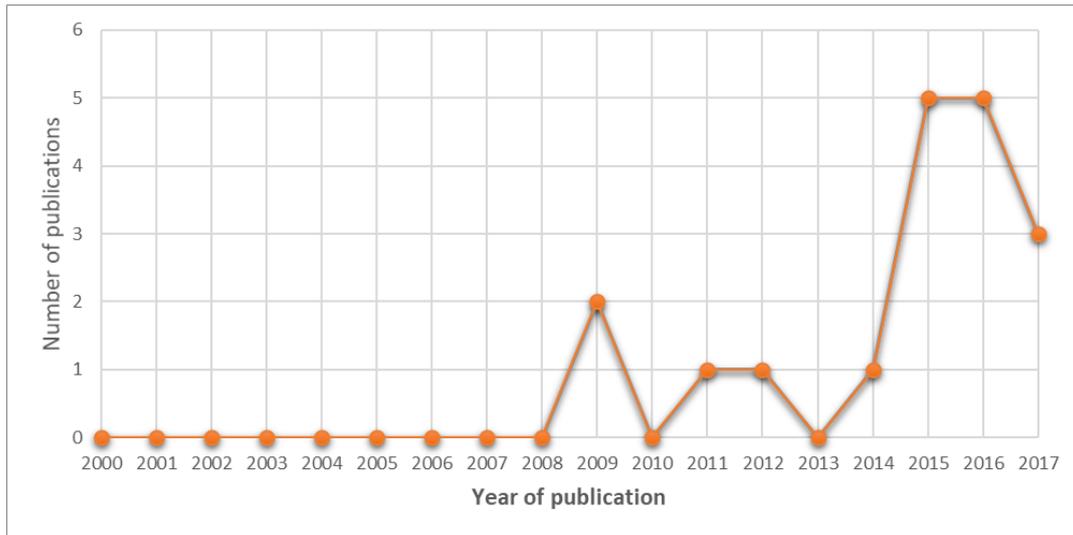


Figure 2. Number of published articles (2000–1 November 2017).

Table 1 presents chronologically an overview of the selected articles specifying five disciplines, the name of the authors together with the publication year, the research purpose, the adopted framework, the level of analysis, and the subcategory of tourism investigated. As shown in the column for the research purposes, 11 articles conduct business model analysis based on certain selected frameworks in order to explore success factors as well as influencing factors related to performance and the business model configurations. As a result, their level of analysis is concentrated more on the company level than on the industry level, and to an even lesser extent on the product level. With regard to the frameworks that are applied, 10 of the studies use business model-related frameworks either through qualitative or quantitative research. Among the frameworks, the Canvas framework is the one used most often (four articles out of 10).

Table 1 also shows that the articles concern four main types of nature tourism: agritourism and rural tourism, ecotourism, sport tourism, and various services within the nature context. From this first analysis, several aspects can be noted. None of the journals have published more than one article concerning business models. This can be interpreted as a possible lack of debate, or interest in initiating a debate, concerning business models in nature tourism. Moreover, considering the year of publication, two-thirds of the articles were published within the last three years of the selected time period 2000–2017. This confirms that scholars have only recently started to apply the business model concept within the context of nature tourism.

Table 1. An overview of the reviewed articles.

Discipline	Research Author(s)	Research Purpose	Framework	Level of Analysis	Type of Tourism
Business, Management and Marketing	Peric et al. (2017) [61]	Incorporation of tourism experience into BM concept		Product and industry	Sport tourism
	Di Gregorio (2017) [62]	Analysing place-based BMs	Place-based BM	Company and industry	Agritourism
	Brannon and Wiklund (2016) [63]	Investigating the relationships between BMI and performance	BMI	Company	Winery tourism, agritourism
	Peric and Wise (2015) [64]	Conceptualizing tourism experience and value offering	BM framework by Johnson et al. (2008) ¹ [74] and experience-based framework by Pine and Gilmore (1998) ² [75]	Company	Sport tourism
	Hojman and Hunter-Jones (2012) [47]	Wine tourism played role in strategy-making of winery industry		Company and industry	Wine tourism
Environmental Management	Broccardo et al. (2017) [65]	BMI's key success factors in rural sustainable development	BM Canvas and Schaltegger et al. (2012)' sustainability approach [28]	Company and industry	Agritourism
	Scheepens et al. (2016) [44]	Design of SBMs using three dimensions: costs, eco-costs, and market value.	EVR ³ Model, Circular Transition Framework, and PSS	Product and industry	Water tourism
	Torquati et al. (2015) [66]	Examining multi-functional farm BMs	BM Canvas and entrepreneurial models	Company	Agritourism and rural tourism
	Bishop et al. (2009) [67]	Exploring SBM for biodiversity conservation and key success factors		Industry	Ecotourism
Tourism	Cannas (2016) [68]	Analyzing sustainable management of a cultural heritage	Sustainable development and SBM	Company	Cultural heritage tourism, rural tourism

Discipline	Research Author(s)	Research Purpose	Framework	Level of Analysis	Type of Tourism
	Fasone et al. (2016) [69]	Exploring customer-oriented BMs	Customer-centered BM	Company	Accommodations in a mountainous area
	Sarkar and Sinha (2015) [43]	BM within ecotourism		Industry	Ecotourism
	Huang et al. (2009) [53]	Introducing a new BM for e-commerce	BM framework by Afuah and Tucci (2003) ⁴ [76]	Company	Traditional food souvenir tourism
Information and Technology Management	Alamäki and Dirin (2015) [70]	Describing the development process of digital service-oriented BMs		Product and industry	Mobileapps in outdoor tourism (as guide)
	Pucihar et al. (2015) [71]	Co-creation of innovative tourism services	BM Canvas	Company and industry	Tourism services in nature context
	Peric and Djurkin (2014) [72]	Development of a new approach in destination management based on social responsibility		Company and industry	Local tourism
	Hsiang et al. (2011) [73]	Innovations in BMs promoting national tourism development		Industry	Tourism websites from farms and national parks
Social Science	Rusu (2016) [54]	Examining the innovation impact on BM	BM Canvas	Company	A small travel agency in speleotherapy ⁵ tourism

Note: Business model [BM], Business Model Innovation [BMI], and Sustainable Business Model [SBM]. ¹ BM components are defined as customer value proposition (CVP), profit formulas, key resources and processes. ² Consist of “entertainment”, “educational”, “escapist”, and “aesthetic” experiences. ³ Eco-costs Value Ratio. ⁴ Consist of nine models of “Advertising”, “Merchant”, “Brokerage”, “Intermediary”, “Manufacturing”, “Subscription”, “Utility”, “Affiliate”, and “Community”. ⁵ A therapy by breathing the air from a salt mine as a cure for many diseases, such as asthma, rhinitis, and allergies.

In this regard, some key points regarding the value structure and source of value creation can be identified. What is emphasized as the source of value creation by ecotourism, rural tourism, and agritourism stems from a rather similar logic. For example, the value creation source is related to location-specific capabilities such as “local embeddedness” by Di Gregorio (2017) [62], as “local heritage” by Cannas (2016) [68], and as “community-based” structures by Peric and Djurkin (2014) [72] and Sarkar and Sinha (2015) [43]. Geissdoerfer et al. (2016) [37] assert that sustainable value created through environmental, social, and economic effectiveness, efficiency, and resilience, and that stakeholder management refers to collaboration with multiple stakeholders and is essential to overcome a firm-centric approach to value creation [37].

Other aspects can be noted concerning innovation, destination management, co-creation, and specifically customer-related aspects. Across the literature, 15 articles analyze new products, processes, and more importantly, new business models to serve their research purpose (see Table 2 and related statements following this table). Among the studies chosen to emphasize the industry as well, only five articles explicitly provide insight regarding destination management. Here, proper and effective involvement of governmental organizations and policy-makers is regarded as crucial in tourism legislation [43,67,72], as it can simultaneously facilitate firm performance and help the industry reduce costs [44], and can promote the businesses in this industry [73]. In the case of sustainable business models in nature tourism context [43,44,67,72], it is argued that this concept is based on the combination of the concept of business model together with the concepts of “sustainable value creation”, “stakeholder management”, and “long term perspective” [37].

The co-creation concept and the role of stakeholders are among the mentioned concerns and purposes of four studies that discuss the active engagement of stakeholders within the value network [72,73] and users’ experiments [70,71]. Finally, two other articles address other features of business model design, specified as customer interface through information processes [63], and customer segmentation [47].

4.2. Further Analysis of the Literature

The selected articles were reviewed with a focus on the research questions and the relevant aspects in terms of business model conceptualization and operationalization, as well as sustainability. The analysis and findings are illustrated in Table 2 and described in the following text.

The applied categories relative to conceptualization and operationalization that are shown in the table are based on the proposal by Massa et al. (2017) [77]. The category “descriptive tool” refers to the conceptualization of a business model through empirical demonstration of the firms’ activities and their outcomes, known as value creation and capturing. Within the category “cognitive schema”, the business model concept concerns cognitive interpretations and perceptions regarding an “image” of real activities and systems instead of real ones. When the business models are understood as “conceptual tools”, the business model structure is usually described.

With regard to the operationalization of the business model concept, Reinhold et al. (2017) [1] claim that the way the business model concept is defined can determine how business models can be operationalized. Following the three categories of conceptualization, three approaches to operationalization are determined accordingly and shown in the table. Defining business models through descriptive tool leads to a “positivistic stance” in which activities are measured and observed directly. When business models are viewed as cognitive schemas, the perspective adopted is qualified as a “constructivist stance”; here, researchers tend to outline activities and relationships through managers’ language. Finally, when the business model concept is understood as a conceptual tool, various frameworks (e.g., Canvas) are applied to its operationalization and such a perspective can be qualified as a “predefined stance”. In accordance with the studies of Reinhold et al. (2017) [1] and Massa et al. (2017) [77], the two constructs of conceptualization and operationalization are regarded within the same category, as shown in Table 2.

With regard to sustainability, based on the literature, the categories include environmental, social, and economic aspects and innovation [50–52]. Here, the focus is on the various types of innovation identified by Hjalager (2010) [52]: product/service, process, management, marketing, and institutional.

Table 2. Summarized findings related to the research questions.

Articles	Business Models in Nature Tourism						
	Conceptualization and Operationalization			Sustainability			
	Descriptive Tool/ Positivistic Stance	Cognitive Schema/ Constructivist Stance	Conceptual Tool/ Predefined Stance	Environmental	Social	Economic	Innovation
Di Gregorio (2017) [62]							Institutional Process
Peric et al. (2017) [61]							
Broccardo et al. (2017) [65]							Institutional
Cannas (2016) [68]							Management
Fasone et al. (2016) [69]							
Brannon and Wiklund (2016) [63]							
Scheepens et al. (2016) [44]							Institutional
Rusu (2016) [51]							
Torquati et al. (2015) [66]							Marketing
Alamäki and Dirin (2015) [70]							
Sarkar and Sinha (2015) [43]							Process
Peric and Wise (2015) [64]							
Pucihar et al. (2015) [71]							
Peric and Djurkin (2014) [72]							Institutional
Hojman and Hunter-Jones (2012) [47]							
Hsiang et al. (2011) [73]							
Bishop et al. (2009) [67]							Institutional
Huang et al. (2009) [53]							

It can be noted that eight articles apply the business model concept as a conceptual tool that becomes operationalized within a business model-related framework; among them, Canvas is the most popular [53,54,65,66,71], which can stem from its flexibility and analytical approach based on the description of the business through the identification of some main components [20]. Here, in addition to the business model-related frameworks, some scholars use other frameworks and models simultaneously. For example, models used include the sustainability framework by Schaltegger et al. (2012) [28,65], the Eco-Costs Value Ratio model [44], the sustainable development and sustainable business model framework [68], entrepreneurial models [66], and Pine and Gilmore's (1998) [75] experience-based framework [64].

Nine studies tend to explore and describe the business model concept empirically as a "descriptive tool". Established upon what is claimed by Massa et al. (2017) [77], this approach is accompanied by testing hypotheses regarding the related role of business models, as further evidenced by current research. For instance, through four propositions, Peric et al. (2017) [61] explore the relationship between sport experience and business models, whereas Brannon and Wiklund (2016) [63] analyze the relationships between performance and BMI. Likewise, Hojman and Hunter-Jones (2012) [47] use hypotheses to classify winery business models, while Fasone et al. (2016) [69] examine customers' perceived quality through three hypotheses. Moreover, as claimed by Massa et al. (2017) [77], the real

attributes used when business models are viewed as descriptive tools can emerge through “novel ways of organizing business” and an “early notion of disruptive technologies/innovation” (p. 79). Examples can be testing the prototypes and technologies known as “minimum viable products” in Alamäki and Dirin (2015) [70] and the “collaborative commerce” mechanism in Hsiang et al. (2011) [73]. A business model as a descriptive tool describing social enterprise activities can also be defined across interactions between the company and the community, as in Peric and Djurkin (2014) [72].

Two articles can be clearly related to the positivistic stance approach by Massa et al. (2017) [77], explained as referring to the “sources of value creation inherent in innovative business models” (p. 79). This is the case for the usage of “location-specific resources to create and capture value”, highlighted within “place-based business models” in Di Gregorio (2017) [62], and similarly, “deliver environmental benefits” through new business models in Bishop et al. (2009) [67].

One article is identified within the category of “cognitive schemas”. This is the one by Sarkar and Sinha (2015) [43] who argue that no business model structure can be clearly recognized due to the novelty of the business. They understand business models as the mental perceptions of entrepreneurs rather than the empirical structures, and that is why “the lack of capacity in running the financial aspects of the business” (p. 104) occurs.

Among the eight articles that show sustainability-related concerns, seven refer to sustainable value proposition, which emphasizes the triple bottom line approach [43,44,65–68,72]. In addition, social and economic sustainability are highlighted across constructs like resilience [62], social benefits [66], social responsibility [72], social accessibility [68], and financial livelihood [43]. From this analysis, it can be noted that more emphasis is placed on social and economic sustainability and less on environmental sustainability. Seven studies deal explicitly with environmental concerns; these include through blending educational services with rural tourism services [66], creating value from ecosystem conservation [67], reducing the eco-burden of products [44], “environmental regeneration” [68], and raising awareness with a view to preserving rural landscapes [65,72]. Sarkar and Sinha (2015) [43] focus on ecotourism business models, noting a “trade-off between environmental sustainability and financial success” (p. 100).

With regard to the various types of innovation, eight articles emphasize innovation across various aspects. Institutional innovations are established through BMIs [44,62,65,72]; as well as through policy innovations [67]. Marketing innovations are configured across innovative channels in order to find potential customers [66], while management innovation can become embedded within novel usage of resources in value creation [62], and likewise within innovative management models [68] which can lead to other innovation types. On the other hand, policy innovation [67] can result in any type of innovation within businesses. Moreover, implementing new types of activities [43] can refer to process innovation. On the other hand, agritourism itself can be considered as a form of innovative tourism versus traditional agricultural business models [62,65,66] as it “can be interpreted as a reconfiguration of the existing model of agricultural farms to a new one” [65] (p. 2).

Moreover, these eight articles differently address sustainability through business models; half of them benefit from applying the business models as conceptual tools through combining this concept with other sustainability-related frameworks [44,65,66,68]. Besides, the matter of dealing with sustainability-related issues can be reflected upon either changing the existing business models partially and focusing on some parts or generating a completely new one [78]. Regarding the former approach addressing sustainable business models, the study by Peric and Djurkin (2014) [72] focuses on the value network and interaction among them, while Scheepens et al. (2016) [44] introduce sustainable products argued to have “surplus value”, whereas Bishop et al. (2009) [67] elaborate on creating value from preserving the ecosystem through cost and benefit analysis of using the environment as the resource. On the other hand, within the other five studies [43,62,65–68] following the latter approach toward capturing sustainability, by developing a completely new business model, results in perceiving sustainable business models as a solution to preserve natural-cultural resources as well as provide the local community with enormous opportunities.

It can be added that within the articles with no sustainability-related concerns, the innovation concept is also highlighted. For example, institutional innovation is emphasized through innovative business models [50,61,73], BMIs [54,63], and collaborative innovation in providing services [71] which may result in the innovations in processes and services. Moreover, the service innovations are applied

together with process innovation within the literature as unique experiences stemming from innovation designs [61] and innovative service apps through co-creative processes [70]. BMI is highlighted as encompassing various types of product, process, marketing, and organizational innovation [54].

5. Conclusions

This study has presented a literature review of the business models in nature tourism with particular focus on sustainability-related aspects. This review included 18 articles that have been analyzed in relation to the authors' understanding and use of the business model concept, and its relevance to environmental, economic, and social sustainability and innovation for sustainability.

The findings illustrate that the literature is still very sparse and the concept of business model in nature tourism is understood and used in a relatively limited way. This is in line with the broader tourism business model literature. Some of the investigated studies apply the business model concept based on the research narrative rather than a business model's real conceptualization, often without any clear definition of this concept.

Moreover, despite the cruciality of sustainability within nature tourism and its high relevance, only eight of the sampled articles include considerations and discussion of sustainability; seven of them concern the environmental aspect. This is clearly a research gap that could be filled by future studies. Thus, future endeavors can be dedicated to explore sustainable business models in nature tourism as its strong reliance on local communities, nature, and animals, and investigate how much business models need to evolve within various contexts in order to contribute to sustainability. Moreover, future studies can interpret the relationship between the extent which business models change and the development stage of existing business model.

The findings also suggest that the investigated nature tourism studies tend to adopt a static perspective on business models and as a consequence, innovation is not particularly investigated. Considering that sustainability is often viewed not as a "goal" but as a journey, this limitation can be regarded quite negatively. This finding can also be associated with the existence of few studies that build and configure every feature of their business model in relation to sustainability. Therefore, within future studies, researchers can explore the antecedents which lead to developing business models toward sustainability either partially or completely.

The definition of nature tourism that this study adopts is very broad and could be seen as conflicting with the understanding of sustainability as an adaptive approach. Future studies could investigate possible similarities and peculiarities among, for example, agritourism, rural tourism, and ecotourism. Another direction that could be pursued is the comparison of the sustainable business models in nature and non-nature tourism through empirical or conceptual studies, and an exploration of the extent to which sustainability is embedded within a business model design and how it is innovated. Last but not least, future attempts could be devoted to the comparison of tourism contingencies with other service-centered industries with regard to sustainable business models.

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Research Article

Driving Business Models Toward Sustainability in Arctic Nature Tourism



Direcionamento de Modelos de Negócio para a Sustentabilidade no Turismo de Natureza do Ártico

Samira Sahebalzamani¹

ABSTRACT

Context: research into sustainability as a highly debated concept has become widespread and given rise to a diverse and interesting arena in the management literature in which the relevance of business models is extensively acknowledged. **Objective:** by integrating sustainability into the business model concept, this study attempts to determine how business models are driven toward sustainability. **Methods:** a qualitative multiple-case approach is applied to scrutinize five small/micro companies offering nature-based activities in Arctic Norway. **Results:** four internal and six external drivers are found crucial to incorporating sustainability in business models. **Conclusion:** the findings contribute to the field of sustainable business models by deepening the understanding of how specific internal and external drivers operate across different business models. Moreover, business models are driven toward sustainability differently, depending on the extent to which sustainability is embedded into them.

Keywords: business models; sustainability; drivers; Arctic nature tourism.

RESUMO

Contexto: cresce cada vez mais o número de pesquisas que se voltam para a sustentabilidade como um conceito de grande destaque, dando origem a uma arena diversa e interessante na literatura gerencial, na qual é amplamente reconhecida a relevância dos modelos de negócios. **Objetivo:** ao integrar a sustentabilidade ao conceito de modelo de negócios, este estudo tenta determinar como se direcionam os modelos de negócios com vistas à sustentabilidade. **Métodos:** aplica-se uma abordagem qualitativa de casos múltiplos para examinar cinco pequenas/microempresas que oferecem atividades de turismo de natureza na Noruega ártica. **Resultados:** identificaram-se quatro direcionadores internos e seis externos considerados essenciais para a incorporação da sustentabilidade nos modelos de negócio. **Conclusão:** os resultados contribuem para o campo dos modelos de negócio sustentáveis, aprofundando a compreensão de como direcionadores internos e externos específicos operam em diferentes modelos de negócio. Além disso, os modelos de negócios se voltam à sustentabilidade de formas distintas, dependendo do grau com que a incorporam.

Palavras-chave: modelos de negócio; sustentabilidade; direcionadores; turismo de natureza no Ártico.

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INTRODUCTION

“There is perhaps no conceptual theme so dominant in the contemporary tourism literature as sustainability” (Weaver, 2012, p. 28). Sustainability is adopted by numerous tourism scholars (Bramwell, Higham, Lane, & Miller, 2017; Coles, Warren, Borden, & Dinan, 2017), and is central within management science: enterprises are assumed as “the most powerful potential sources of the solutions to sustainability issues” (Zollo, Cennamo, & Neumann, 2013, p. 254). Therefore, this study focuses on companies in tourism, a fast-growing sector characterized by very limited sustainable practices (Gössling, Hall, Ekström, Engeset, & Aall, 2012). The research into Arctic tourism as a new trend has intensified since the mid-1990s (Maher et al., 2014) as the rapid change in guests’ interest and number as well as community-based businesses, demands for systematically obtaining knowledge on micro-level sustainability issues in Arctic (Lee, Weaver, & Prebensen, 2017), for instance, a lack of trained human resource, very vulnerable context, and high seasonality (Maher et al., 2014). Moreover, the sustainable use of the natural environment in Arctic is highly debated, which makes the sustainability its ‘main theme’ (Lyngnes & Prebensen, 2014; Lee et al., 2017), as tourism companies are more likely to be driven by a short-term financial horizon (Bramwell & Lane, 2013). To foster sustainable Arctic tourism, more research is required to highlight various aspects of this vulnerable context with a great dependence on nature specially in peripheral rural areas where nature tourism is boosting considerably and has a great potential to contribute to sustainable development (SD) (Lyngnes & Prebensen, 2014).

The concept of business model (BM) is broadly used to indicate “the design or architecture of the value creation, delivery and capture mechanisms employed” (Teece, 2010, p. 179), and is considered “a key initiating component of corporate sustainability” (Schaltegger, Hansen, & Lüdeke-Freund, 2015, p. 3). The latter is defined by Dyllick and Hockerts (2002) as “meeting the needs of a firm’s direct and indirect stakeholders . . . , without compromising its ability to meet the needs of future stakeholders as well” (Dyllick & Hockerts, 2002, p. 131). As such, a business model for sustainability is defined by Schaltegger, Lüdeke-Freund and Hansen (2012) as “supporting voluntary, or mainly voluntary, activities which solve or moderate social and/or environmental problems” (Schaltegger, Lüdeke-Freund, & Hansen, 2012, p. 21). Likewise, Zott and Amit (2010) define BM concept as “a system of interdependent activities that transcends the focal firm and spans its boundaries” (Zott & Amit, 2010, p. 216). In this sense, the development of sustainable business models (SBM) is argued to facilitate the existing interactions between the focal company and

the stakeholders along integrating their activities (Breuer, Fichter, Lüdeke-Freund, & Tiemann, 2018).

Hence, this research strives to analyze existing BMs in Arctic nature tourism to discover how they are driven toward sustainability. Acquiring insights into the BM concept can assist tourism researchers and practitioners in assessing ongoing business practices to make changes toward sustainability (Reinhold, Zach, & Krizaj, 2017). Thus, the SBM concept has been introduced to incorporate sustainability in business strategies (Bocken, Short, Rana, & Evans, 2014). However, this concept has been addressed by few scholars investigating the tourism sector (Coles et al., 2017; Reinhold et al., 2017; Sahebalzamani & Bertella, 2018), and it is not entirely exposed how companies incorporate sustainability into the BMs, and what the motivations are for them to change the BMs for sustainability (Bossle, Barcellos, Vieira, & Sauvee, 2016; Rauter, Jonker, & Baumgartner, 2017; Sommer, 2012). Zollo, Cennamo and Neumann (2013) emphasize that the answer to the question of “‘why (should companies embrace sustainability?)’ generated the central and by far the largest empirical effort in the corporate sustainability knowledge domain” (Zollo et al., 2013, p. 242). Although grappling with the drivers underlying transformation is crucial (Stampff, 2016), and can help companies to change BMs for sustainability more successfully (Sommer, 2012), only few studies addressed the drivers (Foss & Saebi, 2017) and mostly pursued conceptual or review approach (Andreini & Bettinelli, 2017; Bossle et al., 2016; Foss & Saebi, 2017; Zollo et al., 2013) rather than empirical (Rauter et al., 2017; Stampff, 2016).

Inspired by Dyllick and Muff (2016), this study seeks to differentiate BMs based on embedded sustainability aspects and extends the previous traditional value creation perspective (business-as-usual) that is focused on consumers and shareholders by considering various stakeholders and including sustainability relevant factors in BMs (BM for sustainability). By applying a case study approach, this research focuses on the drivers, and analyzes empirically BMs to address: How are BMs driven toward sustainability in Arctic nature tourism? By going deep into the drivers for SBM development (Breuer et al., 2018) and exhibiting how these drivers operate in practice within various BMs, the findings will extend the prior classification of drivers from internal and external to the way that each driver contributes to develop a SBM and allow us to give practical insights into SBM literature. This article is structured as follows: The drivers underlying transformation in BMs and applied theoretical framework are discussed within the next part. Following this, the methodological choice of this research is elaborated on. Furthermore, data analysis is presented, and the main findings are discussed considering prior literature.

Finally, some suggestions and implications will be outlined for future studies, practitioners and decision-makers.

THEORETICAL BACKGROUND

Drivers underlying transformations in BMs

Drawing upon the recent management literature, drivers toward transformation in BMs are classified into two main categories: internal drivers based within the focal company and external drivers stemming from outside the company (Andreini & Bettinelli, 2017; Bossle et al., 2016; Foss & Saebi, 2017; Rauter et al., 2017; Stampff, 2016; Zollo et al., 2013). With the notion of business model innovation (BMI) being driven by the need for sustainability, Andreini and Bettinelli (2017) point to the sustainability opportunities and corporate social responsibility (CSR) activities that drive the transformation toward a new BM.

Sustainability concerns stem from the personal values and perceptions of entrepreneurs as decision-makers conducting change within BMs (Bossle et al., 2016; Foss & Saebi, 2017; Rauter et al., 2017). Motivations and aspirations (Zollo et al., 2013), organizational culture, human resource, employee satisfaction, and commitment (Bossle et al., 2016; Foss & Saebi, 2017; Rauter et al., 2017; Stampff, 2016) are emphasized as internal drivers as well. Furthermore, the leaders are playing the central role to facilitate employee commitment and collaboration (Rauter et al., 2017; Stampff, 2016).

Likewise, organizational capabilities such as environmental capabilities (Bossle et al., 2016) and dynamic capabilities (Andreini & Bettinelli, 2017; Foss & Saebi, 2017) are stressed as internal drivers. Corporate strategies are also claimed to be capable of driving change in BMs (Bossle et al., 2016; Foss & Saebi, 2017; Rauter et al., 2017). Moreover, Bossle, Barcellos, Vieira and Sauvee (2016) highlight the practices linked to environmental certifications as well as encouraging and 'greening' the suppliers as driving factors toward eco-innovations.

Whereas customers and economic pressures are regarded as the most important external drivers constituting change in BMs (Stampff, 2016), Rauter, Jonker and Baumgartner (2017) conclude that customer preference and competition do not trigger change in BMs toward sustainability. Additionally, policy-makers and legal regulations can contribute to transformation in BMs (Bossle et al., 2016; Foss & Saebi, 2017; Rauter et al., 2017; Zollo et al., 2013). Researchers also claim that competitors, cooperation within the network on one hand, and change in competition, stakeholders, and market demand on the other hand (Andreini & Bettinelli, 2017; Bossle et al., 2016; Foss & Saebi, 2017; Stampff, 2016; Zollo et al., 2013), are relevant external drivers. Finally, change in technologies is mentioned as being the antecedent to eco-innovations and BMIs (Bossle et al., 2016; Foss & Saebi, 2017). In Table 1, the findings from the most recent literature are summarized in terms of internal and external drivers underlying the transformation in BMs as well as the papers' methodology.

Table 1. Potential external and internal drivers toward transformation in BMs.

Author(s)	Methodology	External drivers	Internal drivers
Andreini and Bettinelli (2017)	Literature review	Networking, cooperation, and sustainability opportunities	Activities, organizational capabilities, and managerial cognitive processes
Rauter et al., 2017	Case study	Legal regulation	Employee satisfaction, commitment, organizational culture, leaders and their values, and corporate strategies
Foss and Saebi (2017)	Literature review	Change in competition, network stakeholders demand, technologies, and regulations	Change in strategies, dynamic capabilities, organizational values, culture, leadership, and managerial cognition
Bossle et al., 2016	Literature review	Change in technology, regulatory and normative pressures, market demand, and cooperation with external stakeholders	Efficiency, managers' concerns, leadership, human resource, culture, encouraging the suppliers, and corporate environmental strategies
Stampff (2016)	Case study	Customers, economic pressures, stakeholders, and context	Top management involvement, commitment, culture, processes, and employees
Zollo et al. (2013)	Conceptual study	Competitors, policy makers, stakeholders, and broader society	Motivations and aspirations

This study's theoretical framework

This study's approach integrates the general BM framework by Teece (2010) with the SBM Guiding Principles by Breuer, Fichter, Lüdeke-Freund and Tiemann (2018) (Figure 1). The research also applies the measures and indicators of the Standard for Sustainable Destinations by Innovation Norway (Innovation Norway, 2017) as it analyzes BMs in Arctic Norway to configure the research theoretical framework. The triangle in Figure 1 illustrates the general BM framework by Teece (2010) that specifies the BM based on three main areas: value proposition, value network, value creation and capturing. Additionally, overlapping circles (Figure 1) display the SBM principles that include 'sustainability orientation,' 'extended value creation,' 'systematic thinking' and 'stakeholder integration' (Breuer et al., 2018). These

principles are undertaken as the basis to design the research as well as to conduct the analysis, as they provide both researchers and practitioners with a checklist of various issues linked to a SBM (Breuer et al., 2018). Essentially, this study's perspective is built on the following shifts (Breuer et al., 2018): from a focus on shareholders and customers to the inclusion of various stakeholders, from a priority given to monetary values to the extension to non-monetary values, and from an approach centered on an organization to the network approach comprising several actors. As Zollo et al. (2013) assert that there is always a reason for transformation toward sustainability, the drivers underlying each of four SBM principles are examined through applying the concept of 'motivational factors' or 'external and internal stimuli' (Zollo et al., 2013).

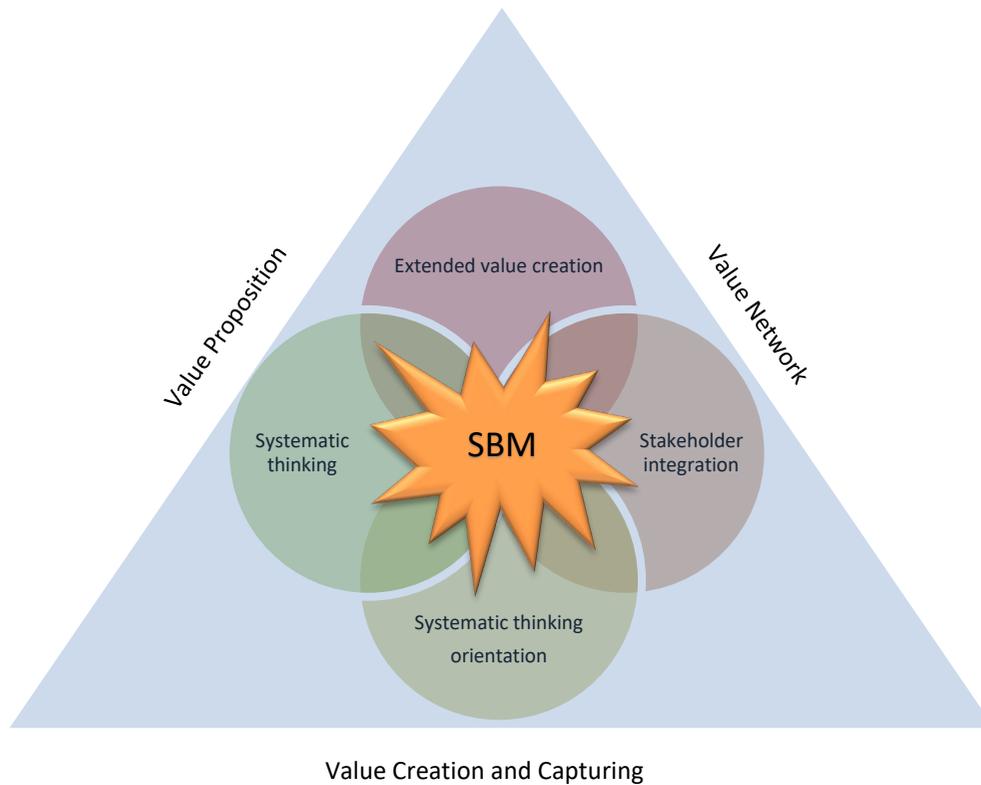


Figure 1. Theoretical framework.

METHODS

Research design

This study is designed as a qualitative multiple-case study to develop the theory based on the empirical data

(Eisenhardt, 1989; Yin, 2014) to answer "how BMs are driven toward sustainability in Arctic nature tourism?" Case study design enables us to address the inherent complication of sustainability issues (van Kerkhoff, 2014) as it is a powerful approach in explaining complex phenomena, which cannot be manipulated by the researcher (Yin, 2014).

Sampling and case selection

A multiple-case study design provides cross-case comparisons to uncover the emergent patterns related to the ‘drivers’ both within and across the companies (Yin, 2014), because this paper aims to run a comparative analysis across various BMs in terms of embedded sustainability. Such design relies on careful selection of cases that are most likely to contribute to theory development; hence, purposeful theoretical sampling strategy was pursued to identify the potential cases (Eisenhardt, 1989). The selected cases are tourism companies offering nature-based activities in Finnmark, the northernmost Norwegian county located above the Arctic Circle. Two industries of petroleum and tourism have the potential to contribute in both economic and social growth of this county; however, the tourism industry is perceived as a good solution to preserve the nature and simultaneously create sustainable value (Chen, 2015). According to the Norwegian Ministry of Trade and Fisheries, “nature is an important part of the Norwegian tourism product. Large parts of the tourism industry use nature as a starting point for their products” (Det Kongelige Nærings- og Fiskeridepartement, 2017, p. 7). Among different nature-based products, the northern lights phenomenon led to a significant growth in the number of nights that foreign tourists stayed in Arctic regions, an increase of duration of almost five times over the last 10 years (Det Kongelige Nærings- og Fiskeridepartement, 2017).

To identify cases and come to grips with the context, pre-fieldwork meetings were arranged with local researchers (from UiT/The Arctic University of Norway), and the organizations *Kunnskapsparcken Origo* (knowledge park) and *Innovasjon Norge* (Innovation Norway). These two organizations are responsible for supporting companies by offering consultancy and funding at different stages of BM development. Simultaneously, the online content underlying the tourism sector in the area was explored to gain an overview of the existing tourism companies and their online profile, as well as promotional materials.

A total of 42 potential tourism companies were recognized and were classified into four groups. Group 1 includes the companies that are most likely to have an SBM, while group 4 encompasses the ones that are least likely to have strong concerns regarding sustainability issues. This classification is fundamentally built upon: insights gained from the pre-fieldwork meetings and the company’s online profile; how the company is promoted publicly in terms of sustainability. The selected companies belong to groups 1 and 2 as they reflect this paper’s theoretical perspective on SBMs (Yin, 2014). Group 1 includes the companies that are certified by Norwegian Ecotourism, as they “offer nature and cultural experiences with local roots and real meetings with people and nature” (<https://norsk-okoturisme.hanen.no> retrieved and

translated in March 04, 2019). Group 2 do not hold an eco-certificate, but they are either promoting themselves online as a sustainable business with concerns regarding nature and society or recommended by pre-fieldwork. A total of 10 companies are assumed to provide the best fit for the main concern of this research as give rise to analytic generalization (Miles, Huberman, & Saldaña, 2014).

Data collection and analysis

Semi-structured interviews were carried out in person with key informants who are the founders/CEOs of the companies (in two cases, as suggested by the company’s main informant, also a tour guide and marketing manager were interviewed; see Table 2). Key informants have had the central role in designing the cases’ BM. Each interview lasted between 1 and 2 hours and was conducted by using an interview guide based on the theoretical framework. A minimum of five cases gives an account of a convincing ‘empirical grounding’ (Eisenhardt, 1989; Miles et al., 2014). The process of interviewing has stopped after data collection from five cases, as ‘theoretical saturation’ through ‘diversity of data’ has been achieved (Glaser & Strauss, 1967). Among the final five cases, two are in group 1, and the other three are in group 2. The cases are from two destinations, the city of Alta and Varanger region. Alta has been known as the city of northern lights since 2000, and many tourists consider this city a gateway to Finnmark County (<http://www.visitalta.no/en/facts/gatewaytofinnmark> retrieved in December 12, 2018). The Varanger region is located in the eastern part of Finnmark. This region has started to become known in recent years as one of the best Arctic bird-watching destinations in the world¹. Table 2 presents some characteristics of the cases in terms of their year of establishment, location, activities, interviewees, and eco-certification.

The interviews were recorded and transcribed prior to coding for analysis. Nvivo12 was applied to facilitate the process of categorizing and coding the data (Yin, 2014). The interviews were coded through two phases: first, initial coding was conducted mostly inductively as they emerged from the data while the interview guide, the theoretical framework, and the research question guide the coding process (Zhang & Wildemuth, 2005). Initial coding is mainly comparative and provisional to shape and conceptualize the main analytic directions (Charmaz, 2014). Thus, within the second coding phase, the patterns and emerging themes across ‘drivers’ of sustainable value creation were coded through a focused coding procedure to shed light on theoretical perspective of current study (Charmaz, 2014). Thus, some of subcategories were merged, and some were removed. Such way of content analysis is applied when a research intends to extend a theory or conceptual framework (Zhang & Wildemuth, 2005).

Table 2. A short case description summary.

Cases' name*	Established year	Location	Activities	Interviewee	Eco-certified
Vegex	2017	Alta	Northern lights safari, whale safari, fjord safari, tours related to national parks and Sami culture, food, and accommodation	Founder/CEO and main tour guide	No
Hunder	2011	Alta	Food, accommodation, and dogsledding	Founder/ CEO	Yes
Auro	1965	Alta	Food, accommodation, northern lights safari, snowmobile safari, ice fishing, and reindeer safari	Marketing manager	No
Øya	2001	Varanger	Accommodation, guided bird-watching, and northern lights tours	Founder/ CEO	Yes
Archart	2012	Varanger	Nature-based architecture (bird hides and wind shelters), and providing online content	Founder/ CEO	No

Note. *All the names are fictive.

RESULTS

The data analysis suggests four internal drivers, 'founder,' 'internal resource,' 'organizational culture,' and 'certificate.' The significance of the founder's role stems from the founder's personal values, perceptions, and educational and cultural background. Although the interviewer did not ask any questions to directly assess the culture construct as a driver, the cases point to a deliberate attempt to promote and endorse a responsible organizational culture due to its significant role in defining their sustainable performance. Companies also undertake sustainable practices to preserve the natural resources by efficient usage of them. The intention to conduct cost savings (e.g., eco-efficiency or resource efficiency) drives the companies to conserve their resources whether natural or financial. However, two cases believe that eco-efficient practices did not result in cost savings as a motivation toward performing more of such practices. Furthermore, one of the case selection criteria was checking whether the companies have eco-certificates, as the primary assumption was that the eco-certified companies have stronger intentions for SBM development. However, the data suggests that the certificate cannot be regarded as a significant driver toward sustainability.

Moreover, six external drivers are distilled, 'tourist,' 'external resources,' 'actors-stakeholders,' 'challenges and issues,' 'state and regulation,' and 'market incentives.' Three themes are realized through data analysis in relation to the tourist's impact as a driver. The most important emerging theme is tourist segments a company serves. Throughout the current research, the tourist segment with a positive effect (driver) is labeled as responsible tourist. Indeed, attracting them may perform in two ways: increasing tourist satisfaction and strengthening the sustainable performance. However, the companies refer to the tourists' demands for

particular activities that are understood as unsustainable and not eco-friendly, thus, a barrier toward performing sustainable. This type can be either a common tourist or irresponsible tourist; a common tourist is referred to by the cases as a tourist without any specific concern toward nature and sustainability, while an irresponsible tourist may try to deliberately destroy the attraction and nature. Besides, a common tourist neither is responsible nor destroys the nature deliberately; they may make the companies offering activities known as less eco-friendly. Therefore, 'tourist' can be regarded as a double-edged sword; Archart claims that "you need to decide what kind of tourism you want."

Moreover, external resources can make the companies become oriented toward sustainability. The most notable external resource highlighted by the cases is the fragile natural environment in which the companies perform. Another component that is recognized as an external driver is making contribution into the scientific knowledge pool about nature and animals that is perceived as a scientific resource for both contemporary society and the next generations in terms of how animals and birds breed, live, and migrate.

Furthermore, companies may become oriented in a sustainable way, as long as they are seeking a cooperative mechanism due to different reasons. The initiative may either come from the company to provoke effective cooperation or the company is pushed toward sustainability by other partners and does not take the initiative itself. However, Auro perceives a gap in the supply chain and network and asserts that to secure sustainable performance across the industry, it is not enough that one company pursues a sustainable orientation; rather, all the actors are required to prioritize sustainable practices. Thus, cooperation among the actors who are seeking a sustainable performance can secure effective contributions.

Among others, a challenge or an issue existing in a company's surrounding can be a driver, which leads the company to tackle this problem with a solution that drives their BMs toward sustainability and, accordingly, creates sustainable value. Additionally, government and regulations as well as market incentives are recognized as external drivers. To illustrate how the drivers function across five BMs, the drivers together with the relevant emerging themes and examples from cases with regard to SBM principles (Breuer et al., 2018) are featured in Tables

3 and 4. Unlike the prior literature that mainly focuses on sorting the drivers into internal and external, through these two tables, current research seeks to extend such classification based on how each driver's theme contribute to four SBM principles of 'sustainability orientation,' 'extended value creation,' 'systematic thinking,' and 'stakeholder integration.' As such, several statements are derived from the interviews: these citations are examples that address various constructs in terms of drivers and SBM principles.

Table 3. Internal drivers, their themes, and examples in terms of SBM principles.

Internal driver	Related theme	Examples (quotes)	SBM principles			
			Sustainability orientation	Extended value creation	Systematic thinking	Stakeholder integration
Founder	Founder's sense of responsibility toward nature, animals, society, and partners. Engaging with the local community as well as supporting other actors and partners.	"When new companies come you shouldn't just sit back, ..., you need to meet them and engage with them" (Archart) "It is a MUST that we have to be sustainable with a society around us." (Auro)		x		x
	Founder's time perspective depending on different attitudes toward sustainability, whether pursuing long-run approach albeit it seems costly in the short-run. It also determines how employment policies are formed to inspire employees.	"If you have short term financial perspective, you just want to grab as much as you can by acting not sustainable, ..., but not economically clever, ..., and not just for the sustainability but also the financial perspective." (Archart)	x		x	
	Founder's perspective in communicating the company's values and performance to the public through an open and transparent approach.	Pursuit of such approach leads to attract individuals who are eager to cooperate, as they have similar (sustainability) concerns and personal values. Such open practices can provide the local community with clear information regarding the company's green profile.				x
	Commitment toward the necessities of the certificate.	The founders who have their businesses eco-certified try to remain dedicated to the label liabilities.+	x			
	A responsible culture, as this study realized, is defined as stimulating an organizational culture that not only inspires the organization internally but can also contribute to building up awareness surrounding the company, namely, among tourists, public, and partners.	Such a culture results in active contribution of Archart in playing the role of a destination development company.	x	x	x	x
Organizational culture	An open and transparent approach to seek the individuals who have the best fit with their culture and organizational values.	Hunder and Auro define their culture as one that attempts to cherish and inspire employees to enhance their contribution in defining a company's sustainable performance. "Every fall, ..., we have new staff, ..., I explain to them like a full day, ..., their behavior, ..., important that they feel that they are 'Hunder,' a business that thinks about sustainability so they have to do it, ..., for me it is a way of living, ..., so it doesn't make any difference to think like that." (Hunder)	x			
	Flat structure.	"It is in our bones, it is a culture in 'Auro.' If you should be working here, you should have this under your hood, ..., we will be stronger together, it is a big team." (Auro)	x			

Continues

Table 3 (continuation)

Internal driver	Related theme	Examples (quotes)	SBM principles			
			Sustainability orientation	Extended value creation	Systematic thinking	Stakeholder integration
Internal resources	The most important internal resource is the employees who fulfill the related education requirement. Moreover, the crucial role of employees is highlighted in regard to quality enhancement and creating activities from scratch, therefore companies are willing to offer long-term contracts instead of seasonal contracts. To ensure the delivery of sustainable values, the companies point to their focus on hiring the right people who are more likely to acknowledge organizational values.	<p>“I’d like to employ people that appreciate the whole thinking we have, ..., we are attracting the people we want to hire, so it is not so much job for us going out searching for the right person.” (Archart)</p> <p>“That is the uniqueness we have in our staff, ..., they are locals, and we don’t have to carry them by airplanes and pay them high salaries.” (Auro)</p> <p>“All of our guides should have arctic education from UiT” (Vegex, the founder), “my education is Arctic Nature Guide focusing on taking care of the nature.” (Vegex, the tour guide)</p> <p>“We don’t want to hire seasonal workers who have better skills than people from Alta, we prefer the locals.” (Auro) “It costs more money, but in the long run that’s worth it, ..., we use our employees more than anybody else.” (Hunder)</p>	x	x		
	The reliance on particular knowledge to develop the activities.	Such knowledge is internalized through hiring the right people from local community. (Auro)	x			
	The natural resources and the efficient usage of them.	Efficient usage of water and electricity, eco-efficient engines with less pollution, and short-distance traveling perspectives associated with procurement and employees.	x		x	
Certificate	Being certified is not perceived as a significant driver toward sustainability.	<p>Out of the two certified companies (Hunder and Øya), one believes that holding this certificate is a means to evaluate and review the performance and resulted in making improvements, while the other states that this certificate did not impact their business significantly, as the procedures dealing with certificate and renewing it are more bureaucratic than a driver.</p> <p>Based on the other three companies not holding this certificate, two (Auro and Archart) do not believe that being certified can assist the businesses to transform toward sustainability. They argue that the certificate is more about formalities, a ‘bureaucratic exercise’ (Archart), and built upon definitions and assumptions that do not seem sound and solid (Auro). Additionally, Vegex postpones the certificate for the future to satisfy the upcoming customers who will demand such certificates since certificate would become increasingly crucial for the customers when choosing their tour operator (Vegex); thus, the founder does not point to the certificate as a driver.</p>				

Table 4. External drivers, their themes, and examples in terms of SBM principles.

External driver	Related theme	Examples (quotes)	SBM principles			
			Sustainability orientation	Extended value creation	Systematic thinking	Stakeholder integration
Tourist	Tourist segments can perform as either a driver or barrier. Three tourist segments are recognized as responsible, common, and irresponsible tourists.	<p>‘Responsible tourists’ have serious concerns regarding sustainability, thus they require the company to operate in an eco-friendly manner.</p> <p>‘Irresponsible tourists’ are described by Archart as the tourists who are actively seeking to take photos of very rare and endangered birds and animal species. This company tries not to expose these habitats, as it can cause animal and bird disturbance, forcing them to leave their habitats in which they have been living for hundreds of years.</p> <p>Vegex reflects upon ‘common tourists’ demands, saying that “the RIB boat is not eco-friendly compared to kayaking, but people still ask for such activities, ..., [customers] don’t care about CO2 engines produce.”</p>	x	x	x	
	Educating and increasing awareness.	The companies create sustainable value through educating the tourists about nature, animals, and the local community and shaping their behavior through increasing their awareness. In contrast, Vegex, which is not integrating relatively strong sustainability practices into its BM, explicitly mentions that the company does not have intention to educate the tourists.	x	x	x	
	Providing information and knowledge.	The purpose of the company is limited to keeping the tourists informed of different aspects without any educational purpose in the form of stories behind the places, nature, animals, local culture, the company’s sustainable approach, and activities to ensure a more authentic experience.	x			
External resources	The natural environment.	Purposeful pursuit of practices focusing on nature and animal protection enables a company to present these habitats every year, as quite untouched. “It is a fragile habitat that has a bird life, ..., we have chosen not to tell you about it and having that consciousness about where we advise people to go, that’s a huge part of the sustainability.” (Archart)	x	x	x	
	The key materials for developing activities and conducting the business in the long run.	Companies highly depend on establishing long-term relationships with local suppliers to make effective partnerships, although they could have the opportunity to receive the same materials with a higher quality from other suppliers (not local).	x	x		x
	Make contribution into the scientific knowledge pool.	Such contribution creates value for both society and environment via either initiating projects or active collaboration within the external research projects. Archart has launched a project focusing on bird conservation through establishing regional bird-ringing stations to both increase awareness across the community and contribute to the scientific knowledge.	x	x	x	x

Continues

Table 4 (continuation)

External driver	Related theme	Examples (quotes)	SBM principles			
			Sustainability orientation	Extended value creation	Systematic thinking	Stakeholder integration
Actors-stakeholders	Cooperating with stakeholders to benefit them, engage with them, and encourage them to contribute to the SD of the destination.	“The sustainability is about how we are setting up the whole tourism scene to benefit the whole local community, and not just economically by supporting one big company.” (Archart) Auro also affirms that they follow a strategy in which newly established companies receive support as they have all the settlements and supply chain already in place in order to assist these newcomers in establishing their own networks.	×	×	×	×
	Companies are forced to adopt a sustainable orientation as receiving pressure from the partners with strong concerns.	Company has to adjust its perspective according to those partners to establish a continuous partnership; otherwise, the company might lose those partners.	×	×	×	×
	Company might decline some partnerships to maintain its sustainable performance or it may keep such a performance to attract the partners with mutual concerns.	Hunder and Øya, both have been certified, express the notion of being selective in terms of various stakeholders.	×	×	×	×
Issue or challenge	Arctic context raises the concern over the possible environmental degradation, harm, disturbance of animal and bird habitats. Solutions that a company figures out to manage the negative impacts can create sustainable value for both the environment and upcoming businesses that may offer the same natural context.	Archart strives to place the wind shelters at certain locations to guide birdwatchers through specific tracks in nature to make their patterns of moving predictable for birds. Archart also highlights that previously, they withdrew some of their wind shelters at particular locations after assessing the risk and harm. Auro stopped offering an activity that would cause harm: “we had one special product that we haven’t started yet and probably will not, ..., and it is ATV tours, ..., doing trips in the nature, ..., but we don’t want to use those engines because they are destroying the nature, they make tracks that will not grow.”	×	×	×	
	Carbon footprint of some activities and vehicles, thus the company is expected to seek ways to make the least amount of pollution as possible.	A company might consider replacing the current vehicles and snowmobiles with more eco-friendly engines. (Auro) However, an obstacle hindering the transformation toward applying more eco-friendly engines is transaction costs that may slow down the company’s transition. (Auro)	×	×	×	
	A lack of municipality support.	This challenge is expressed by two cases, as it puts the burden on the actors to enhance the sustainable performance of the destination (Archart). Auro commented that a lack of destination management organization (DMO) in Alta increases the actors’ responsibility to collaborate with each other and develop strategies for the region to establish a sustainable destination.	×	×	×	×
	A lack of the specific knowledge required in developing an activity	Auro overcame such a challenge through applying competencies from local partners and artists, because no competitor was willing to share such crucial expertise. Hence, a sustainable solution (social sustainability) to this problem resulted in hiring local artists to generate an authentic experience instead of employing art professionals from other parts of the world.	×	×		×

Continues

Table 4 (continuation)

External driver	Related theme	Examples (quotes)	SBM principles			
			Sustainability orientation	Extended value creation	Systematic thinking	Stakeholder integration
State and regulation	Regulatory pressure is underlined as a significant driver making the companies align their performance toward sustainability.	To keep operating, companies are obliged to consider all aspects of their business, as directed by regulations. Auro argues that the State has to approve related supplementary regulations to secure the sustainable performance of the whole supply chain, and the lack of such a regulatory system is thus emphasized.	×		×	
	State's role as a motivator or promoter.	Three cases (Auro, Øya, and Archart) confirm the critical role of government in the SD of various destinations through launching various projects.	×	×	×	×
Market incentives	Reaching the market.	Three cases (Vegex, Auro, and Øya) perceive their sustainable performance as a way of marketing the company and establishing their public image as a sustainable business to increase their reputation. Consequently, such an incentive can be featured as a driver, although the main purpose concentrates on financial rewards.	×			
	A potentiality closely linked to a destination may encourage companies to exploit that in a sustainable manner to generate profits, and simultaneously offering the activities in terms of tackling the issues related to the context.	"When I came to Vardø, I was just struck by how incredible the potential here was and how little had been done in nature scene." (Archart)	×			
	The nature tourism market.	Such market calls for creating value for nature and more importantly for the local community, as noted by Øya.	×	×	×	

DISCUSSION

The results highlight the crucial role of the company's founder as the salient driver. This is in alignment with what prior literature suggests (Andreini & Bertinelli, 2017; Bossle et al., 2016; Foss & Saebi, 2017; Rauter et al., 2017; Stampff, 2016). Data analysis indicates that for a potential driver to be effective for developing a SBM, it needs to be accompanied by the founder's cognition. Thus, how a founder interprets potential drivers influences decision-making in terms of the organizational response to the drivers and accordingly contributes to integrating sustainability in BMs (Foss & Saebi, 2017; Rauter et al., 2017).

Moreover, the significance of employee engagement and commitment is claimed by the interviewees, as is also confirmed by previous studies (Bossle et al., 2016; Rauter et al., 2017). In addition to the employees' role as the foremost internal resource, the data highlight the practices related to efficient resource consumption as an internal driver, which is noted by Bossle et al. (2016) as well. Besides, the founders

emphasize the supportive and responsible culture, which can markedly drive BMs toward sustainability and being internalized across the company to increase the employees' awareness and inspire them to align their performance with the sustainable goals of the company. The organizational culture as an internal driver was similarly underlined by several scholars (Bossle et al., 2016; Foss & Saebi, 2017; Rauter et al., 2017).

As data analysis suggests, the certificate is not crucial as an effective internal driver because merely one case points to it as such. Thus, our findings are in contrary to the study by Bossle et al. (2016) stressing environmental certifications as an antecedent of eco-innovations. Not certificate, but founder, internal resources, and organizational culture are the salient internal drivers toward SBM. The findings also suggest that the founder's time perspective defines how a company cooperates with various stakeholders including local community, how the founder perceives long-time relationships and issues that are to be tackled, and how a company deals with the tourists as an external driver.

Younger companies thrive on surviving and attracting as many tourists as possible to increase their market share in the short run; therefore, they are more prone to satisfy the tourists' demands for desired activities, although it might be against the company's sustainable goals. However, the companies with more explicitly sustainable goals do not mean to satisfy any tourists' request, instead they remain committed to their sustainable orientation. In addition, such companies with stronger concerns prefer fewer tourists, who are responsible.

Additionally, through this research, different profiles of tourist segments are outlined, as well as how different segments can give us the ground to consider them as drivers; consequently, targeting responsible tourists can be perceived as a driver. Besides, Stampfl (2016) highlights that "the power of important customers can lead to business model changes" (Stampfl, 2016, p. 133), which is opposed to the study by Rauter et al. (2017). Similar to what Andreini and Bertinelli (2017) note about customer knowledge management that lead to transformations in BMs, current research concludes that increasing the tourist's knowledge and awareness can result in creating sustainable value. Among all six external drivers obtained from the data, the tourist role has been emphasized substantially compared with other external drivers.

As prior research suggests (Bossle et al., 2016; Foss & Saebi, 2017; Rauter et al., 2017; Zollo et al., 2013), this study confirms that regulatory pressures can drive companies toward sustainability. However, as noted by two companies, a lack of support from the government leads them to take initiative toward sustainable orientation, as they have strong concerns regarding society and nature that make them go beyond obligations. Alternatively, other cases emphasize the crucial role of the government as both facilitator and promoter.

In addition to the aforementioned findings either confirmed or contrasted by prior literature, this study's findings point to some new external drivers. Among others, external resources can be perceived as drivers and encompass three different resources. The natural surrounding is stressed by most of the companies as the most significant resource that they rely on to generate activities. Additionally, the material, as the second important external resource underlying value creation for local partners, is contended by four cases. Contribution into the scientific pool of knowledge about animals and birds can also be regarded as an external driver toward sustainability. Furthermore, issues and challenges are understood as external drivers based on how a company strives to tackle such challenges through innovative solutions. Finally, market incentives as external drivers can underlie the sustainable performance of the companies.

The SBM principles have been applied as the theoretical framework to both design the research and analyze the data as they address minimum requirements of a SBM (Breuer et al., 2018). As portrayed earlier within Tables 3 and 4, various drivers depending on their role in meeting these four principles contribute differently in terms of integrating sustainability into BMs. Not all the drivers can contribute to all four principles. The more a driver can be applied to define a SBM through these principles, the more crucial it is. Furthermore, this research extends the previous classification of drivers from internal and external to the way that each driver contributes to meet the principles being deemed as the prerequisites of a SBM.

Most importantly, the data analysis suggests that BMs are driven toward sustainability differently depending on the sustainability concerns being integrated within them. The five cases show different extents to which sustainability can be integrated in BMs, and can be located on a continuum (Dyllick & Muff, 2016). Vegex is at the beginning of this continuum and very basic sustainability-related practices are embedded in its BM value logic as the main focus is on revenue maximization. This approach is called by Dyllick and Muff (2016) as "Refined Shareholder Value Management," as the company is mainly driven by the factors that either provide economic value or originated from regulatory pressures, hence being more prone to pursuing short-run financial objectives because sustainability practices are perceived as costly and not as beneficial as such short-term objectives (Dyllick & Muff, 2016, p. 156).

Proceeding through the presumed sustainability continuum, Hunder and Øya can be considered together in next higher place that is named 'Managing for the Triple Bottom Line' by (Dyllick & Muff, 2016, p. 156). They integrate sustainability more deliberately into their practices more than Vegex does, both are certified and expected to adjust their performance in terms of determined indicators. They have specified stronger concerns regarding nature and society, and hence are driven by objectives beyond pure economic value such as the intention to educate tourists and being selective when building their networks.

Finally, placed at the end of this continuum, both Auro and Archart are understood to be 'true' SBMs, as they convert the sustainability issues into opportunities to make positive contributions to the nature and society (Dyllick & Muff, 2016, p. 156). Auro is occupied with the social aspects of sustainability more than the previous cases; in particular, social value creation is mentioned as the most important contribution of Auro to sustainability and its main competitive advantage. Therefore, creating value for the society and stakeholders within the network is deemed as the most dominant driving factor for Auro. This company mostly takes the initiative in creating sustainable value rather

than being oriented by external pressures. In addition, the main concern of Archart is developing products in the form of solutions to overcome sustainability-related challenges. Archart was established to grapple with a sustainability-related challenge within the community (lack of prosperity) with a solution (nature-based architecture) that is built upon the opportunities at the bird-watching destination. Apart from that, this company is organized based on the founder's strong concerns in a way that sustainability is embedded within all aspects of the BM, and consequently driven toward sustainability mostly through the drivers that are not inherently economic-based.

Indeed, it can be concluded that some drivers are mostly linked to BMs with stronger concerns; e.g., the more a company has stronger sustainability concerns, the more the tourists and the intention to increase awareness can result in driving BMs. In addition, contributing in determining solutions to the challenges is associated with the stronger concerns that were reported by Auro and Archart ('true' SBMs), which also demonstrated high consciousness over their activities and possible harms. All the companies were asked to reflect upon whether they have realized any potential negative effect resulting from the activities that led to withdraw them. Such issue was admitted only by Auro and Archart that tackled it previously by terminating a product or activity; the rest of the companies believed that their activities have no unwanted footprint on the nature and community.

Furthermore, each single driver can perform differently within several BMs, depending on whether pursuing proactive or reactive strategies. For instance, concerning the findings about 'cooperation' with stakeholders, as an external driver, when either companies (inside-out) or their partners (outside-in) take initiative, it can generate the stimulus for creating sustainable value. In the former stance, mostly companies with stronger concerns indicate such initiatives, whereas the latter is affirmed by the companies that have to respond reactively to the pressures. Earlier studies (Andreini & Bettinelli, 2017; Bossle et al., 2016) acknowledge the relevance of cooperation through network that can drive BMs; nevertheless, the relevance of this component with regard to different BMs and how they are stimulated from either inside or outside was not clarified.

CONCLUSIONS

This qualitative research was conducted within Arctic nature tourism through exploring five BMs located in northern Norway and aimed to thoroughly investigate the drivers underlying the development of SBMs to determine how BMs are driven toward sustainability.

Based on data analysis, four internal and six external drivers are identified as significant regarding transforming BMs toward sustainability. However, all five BMs are not driven toward sustainability through all 10 (internal and external) drivers; the companies are driven toward incorporating sustainability into BMs differently. BMs with stronger embedded sustainability are driven mostly by their founder's initiatives following the proactive perspective, whereas the BMs with weaker focus on sustainability respond reactively to the external pressures that can also result in generating economic value. Consequently, the latter BMs are stimulated by the drivers that are either perceived as an external pressure or guarantee financial value in short-run, whereas the former BMs are driven beyond the creation of financial benefits.

The current study is limited to five cases in Arctic. Considering that these small companies mostly attempt to survive by primarily offering winter tourism and not confronting mass tourism in rural peripheral areas, the whole tourism scene, strategies, and BMs might be different in larger sectors or other locations not known as peripheral. Therefore, the distinguished drivers and how they can transform BMs toward sustainability would be regarded as context-dependent. Thus, more research is demanded to shed light on larger sectors across the hospitality industry, with more involved actors, higher competition, and specific regulations.

Finally, this research has not found enough convincing evidence regarding certificate as a driver, which could be due to the small sample that are performed within a very particular context. Considering that there is a growing interest both among the policy-makers and companies for such labels, more research is required to clarify different aspects of these certificates, and how they can be employed and defined to ensure that sustainable performance will be delivered.

Managerial and practical implications

Managers can apply this research's findings to comprehend better the drivers either internal or external behind SBM development. Considering that the SBM principles are minimum necessities of establishing a SBM, a focus on the drivers that reach greater number of principles might facilitate the shifting toward development of the BMs, which make effective contributions in SD.

The findings also suggest that a company should think strategically to ensure resource viability in the long run. Although companies are under financial market pressure to make their horizon shorter, all business aspects have to be contemplated beyond pure financial goals to make an

effective contribution to SD, which demands integration of short- and long-term goals (Dyllick & Muff, 2016).

The results reflect practical implications for governmental organizations and policy-makers. Considering that various eco-labels are designed to enhance sustainable performance of businesses and destinations, the current study does not find enough decisive evidence to account for its significance to be perceived as a driver. Thus, more attention should be dedicated to the eco-labels, their definitions

and requirements. Furthermore, the government's role was referred by the cases as both facilitator and promoter; this means that the BMs with weaker internal motivations require the government to take action in facilitating their sustainable orientation.

ENDNOTE

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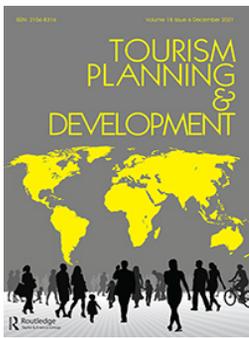
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A Dynamic Capabilities Approach to Business Model Innovation in Times of Crisis

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ABSTRACT

This study explores how tourism entrepreneurs change their business models during a crisis. By adopting dynamic capabilities as integral to business model change, this qualitative study explores how entrepreneurs change business models to meet a crisis, and proposes a taxonomy of important entrepreneurial practices underlying dynamic capabilities. This study empirically examines seven small companies operating in the nature-based tourism industry in Norway. Focusing on dynamic capabilities, whether innovative or adaptive, the findings suggest 12 dynamic capability-based entrepreneurial practices that are categorized as resource-, market, and technology-related practices. This study contributes to the literature by integrating business model innovation and dynamic capabilities in tourism crisis management.

KEYWORDS

Dynamic capabilities;
Business model innovation;
Entrepreneurial practices;
Tourism crisis management

Introduction

Major crises require considerable changes to tourism businesses, and the adoption of the dynamic capabilities (DCs) to business model innovation (BMI) can help investigate how such changes might occur. DCs are those capabilities that enable strategic changes through the reconfiguration of competencies and resources by orchestrating the firm's resource base to match assessments of newly emergent opportunities or threats (Battisti & Deakins, 2017; Leih et al., 2015; Schilke et al., 2018; Teece et al., 1997). Within the tourism crisis management literature (Hall et al., 2017; Sigala, 2020), recently few studies have highlighted the crucial relevance of DCs for enhancing resilience through adaptations aimed at ensuring short-term survival and sustainable competitive advantage (Jiang et al., 2019, 2021a, 2021b; Mansour et al., 2019). In the broader literature, DCs have been discussed with the concept of business models (BMs), i.e. the underlying logic of a business. Some scholars have argued that the development of DCs can lead to BMI (Inigo et al., 2017; Leih et al., 2015; Mezger, 2014; Schilke et al., 2018) i.e. "designed, non-trivial changes to the key elements of a firm's BM and/or the architecture linking these

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elements" (Foss & Saebi, 2017, p. 207). However, the DCs approach still lacks a proper understanding of what constitutes a DC (Kump et al., 2019; Schilke et al., 2018).

This study elaborates on how entrepreneurs change their BMs by proposing a framework that focuses on DCs and their underlying practices relevant to BMI in times of crisis. In the management literature, several scholars have argued that the DCs approach can contribute to a richer understanding of BMs that are implemented through particular practices, processes, and routines that are established by the firm's DCs (Inigo et al., 2017; Mezger, 2014; Saebi, 2015; Teece, 2018). Taking such a position as its point of departure, this study reflects on the possibility of relating the dynamic element of DCs to the innovative element of BMs in the tourism industry. An exploration of crisis management through a temporal investigation of DCs (Schilke et al., 2018) can add an important dynamic dimension to the conceptualization of BMs. Combining the DCs with the BMI has the potential to emphasize the changes at the level of the various BM components without overlooking the BM overall logic.

This study focuses on tourism entrepreneurs during the COVID-19 crisis, and asks: how do entrepreneurs change the BMs via DCs in order to tackle the crisis? To provide a deep understanding of what type of BM changes are considered by the entrepreneurs, and how such changes are implemented, this study conducts a qualitative research of seven nature tourism companies in Arctic Norway. This article begins by discussing previous studies concerning DCs and BMI particularly in times of crisis. Then, two sections are dedicated respectively to the methods and the findings, which rely mainly on data collected via 14 semi-structured interviews with seven entrepreneurs at two points of time during the crisis. The findings are then discussed to elaborate on the taxonomy of DC-based entrepreneurial practices to change tourism BMs. This article concludes by highlighting this study's theoretical contributions and its limitations and by providing suggestions for future studies.

Theoretical background

The DCs approach and BMI

The DCs approach is relevant to the capacity to undergo changes, address threats and exploit opportunities via BM changes. A DC is "the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environment" (Teece et al., 1997, p. 516) and "determine the firm's agility and flexibility in implementing the new organizational design, including the alignment of new and existing activities and responses to the unforeseen internal and external contingencies that unavoidably accompany deploying a new BM" (Leih et al., 2015, p. 30). The changes can occur in any of the key components of a BM: products and services, activities, resources, partners, customer relationships, segments, channels and cost and revenue structure (Osterwalder & Pigneur, 2010; Teece, 2010).

Across the literature, DCs are discussed concerning their underlying microfoundations including processes and procedures (Teece, 2007), managerial and organizational processes and routines (Kump et al., 2019; Mezger, 2014; Saebi, 2015), entrepreneurial and business activities and processes (Inigo et al., 2017; Jiang et al., 2021a, 2021b; Leih et al., 2015; Mansour et al., 2019). Regarding how such changes occur, Teece (2007)

proposed an entrepreneurial management framework that focuses on the capabilities of sensing, seizing, and transforming. Sensing and detecting opportunities and threats, and then seizing emergent opportunities can lead to changes in BMs (Teece, 2007). The DCs are related to the entrepreneur's perception of opportunities to change former routines and resource bases and their willingness and ability to implement changes (McDermott et al., 2018; Zahra et al., 2006). This corresponds well with an opportunity-based view of entrepreneurship, where entrepreneurship is seen as the process of discovering, evaluating and exploiting opportunities (Brück et al., 2011; Leih et al., 2015; Ratten, 2020; Shane & Venkataraman, 2000). Tourism entrepreneurs are the individuals who discover, evaluate and exploit opportunities within the tourism industry, and give rise to innovations in times of crisis (Dahles & Susilowati, 2015).

DCs as core capabilities underlying changes in BMs are classified by Saebi (2015) in three groups that reflect three typologies for BM changes: evolution, adaptation, and innovation. Evolutionary DCs concentrate on incremental adjustments to maintain the existing BMs, whereas adaptive DCs rely on periodic realignments to match the environment. In their most radical form, innovative DCs bring BMs into existence to address a turbulent environment through innovative value creation, delivery and capturing (Saebi, 2015). Other typologies in the literature are akin to the conceptualization of DCs given by Teece (2007) and include sensing abilities to understand the business environment in terms of technology and BMs (Mezger, 2014), competitors, market best practices, and its shifts (Kump et al., 2019), seizing abilities to integrate new market-, technology-, and BM-related knowledge, and translating abilities to implement such knowledge in product and process innovations (Kump et al., 2019; Mezger, 2014). Transforming abilities rely on conducting the changes to adapt value chain activities and decide on core resources and competency sourcing (Kump et al., 2019; Mezger, 2014).

Another classification of DCs refers to their contribution to BMI in terms of sustainability, which is related to the concept of resilience, which relies on the organizational capacity to prepare for a crisis (Ritter & Pedersen, 2020), and in BMs, pertains to the task of finding new methods of value creation to ensure and facilitate a sustainable transition towards post-crisis BMs (Schaltegger, 2020). Inigo et al. (2017) investigated various DCs aimed at either evolutionary or radical BMI for sustainability, and they highlighted both the sensing abilities to pursue an active dialogue with relevant stakeholders and to proactively search for the trends beyond the industry and the seizing abilities to make improvements in value propositions (evolutionary BMs) and to create new value propositions (radical BMs) (Inigo et al., 2017). This classification suggests that the changes in BMs for sustainability evolve and, thus, the classification stands in accord with a dynamic approach towards resilience as a learning process that refers to relevant DCs in the context of crisis management (Hall et al., 2017), which will be discussed following this chapter.

BMs and DCs in crisis management

Recently, Ritter and Pedersen (2020) proposed a typology for BMs in the face of a crisis: resilient BMs, which successfully manage to build DCs and cope with a crisis, and vulnerable BMs, which are not able to adapt by themselves and thus, depend on external interventions. Indeed, resilient BMs emerge through quickly tailoring new products to new

market demands (Manolova et al., 2020). Similarly, as Brück et al. (2011) suggest, entrepreneurial activities are encouraged by crises. Tourism studies have attempted to address responses to crises (e.g. Dahles & Susilowati, 2015; McKercher & Chon, 2004) and building resilience (Biggs et al., 2015; Hall et al., 2017); however, how such crises could stimulate innovative transformations has not yet been thoroughly discussed (Sigala, 2020). Notably, few studies examined tourism firms' responses to crises and discussed BMI and DCs; thus, such empirical studies are relatively scant in the tourism crisis literature compared to business research (Breier et al., 2021; Jiang et al., 2019, 2021b).

Drawing on small tourism businesses' responses to the COVID-19 crisis across eight different countries, Duarte Alonso et al. (2020) suggest several ways in enhancing resilience through coping (reactive) strategies as well as adjusting and changing (proactive) day-to-day activities through which entrepreneurs seek new opportunities to innovatively change their offers. Given hospitality companies in Austria, Breier et al. (2021) claim that BMIs during the pandemic were more focused on incremental changes to generate revenues than on producing a sustainable competitive advantage. They also recognize three drivers for BMI: free capacities, environmental threats and guests (Breier et al., 2021). However, the critical role of DCs in shaping BMs has not been discussed by these two studies (Leih et al., 2015; Schilke et al., 2018), considering that under such tremendous uncertainty, tourism businesses may need to abandon some of their previous practices due to a lack of access to key resources, and hence to reconfigure their resources and practices (Jiang et al., 2021a). Within another multi-industry study of the family firms in European countries, Kraus et al. (2020) found that, across different industries, tourism companies particularly strive to develop new BMs not only to generate revenue but also to diversify the BMs. Given the timing of the study at the peak of the pandemic, this research employed BMs in a more general way to explain the temporary adaptations limitedly and suggested that further research is needed to elaborate on BM changes.

The DCs approach was adopted in tourism studies mostly to address a competitive environment (Leonidou et al., 2015; Thomas & Wood, 2014) rather than a turbulent environment, such as that experienced during the COVID-19 crisis (Jiang et al., 2021a). Although DCs are claimed to be critical in the face of crisis to build resilience (Jiang et al., 2019), this research stream is scarce in terms of the development of new DCs for crisis management (Jiang et al., 2021b). The exceptions are few; through focusing on tourism firms' survival under the Libyan civil war, Mansour et al. (2019) identified the two crisis management capabilities of crisis assessment (cognition) and crisis response (behavior). Still, considering that the authors recognized merely two general capabilities to elaborate on reactive and defensive strategies for coping, a deep understanding of DCs for innovation is missing. Another example is the study of a natural disaster in Australia by Jiang et al. (2021b), who explored how tourism companies handle the disaster and suggested a resource-based DCs typology to address three aspects: "disaster life cycle", "sources of resources", and "deployment of resources". The authors do not discuss how DCs lead to new BMs, and instead leave that question to be explored by future studies and acknowledge that natural disasters and pandemic crises are different considering the DCs particularly developed during the pandemic (Jiang et al., 2021b).

Based on Leih et al. (2015), the current study views DCs as integral to BM change through entrepreneurial practices and skills by which the opportunities and the need to change BMs are recognized and the required resources and competences are

orchestrated. This research regards a DC as a general construct without dividing it into its elements i.e. sensing, seizing, and transforming (Jiang et al., 2019; Mansour et al., 2019). To operationalize the DCs approach in a crisis context, this study's theoretical framework was inspired by Pedersen and Ritter (2020) who proposed a crisis phase model, the 5Ps model, which stands for position, plan, perspective, project, and preparedness. More specifically, DCs and related entrepreneurial practices can be identified through 3Ps (plan, project, and preparedness) by exploring new projects, products, key resources, routines and preparedness to implement new plans as well as the entrepreneurs' perception of newly emerging opportunities and threats. This study notes that although DCs and BMIs are viewed as critical for tourism crisis management, such a research stream is still lacking (Breier et al., 2021; Jiang et al., 2021a, 2021b), therefore, the overall purpose of this study is to contribute to the tourism crisis management literature concerning DCs and BMIs.

Methods

This study follows a multiple case-based grounded theory (GT) approach to answer the question of how entrepreneurs change their BMs via DCs to tackle the crisis. This research approach has been applied to build theories based on case studies by constantly making comparisons between theory and data (Eisenhardt, 1989; Eisenhardt & Graebner, 2007). The GT approach and case study have several elements in common, such as theoretical sampling, case selection, and the use of various sources of data. Drawing on constructivism GT, this study's approach relies on iterative processes of abductively going back and forth between data and theory (Charmaz, 2014; Matteucci & Gnoth, 2017). More importantly, this approach is opportune when little has been known about a subject (Birks & Mills, 2011) and leads this research due to several reasons: the complexity of the investigated phenomenon resulting from a major global crisis, the focus of the study on "how" change processes occur (Charmaz, 2014; Yin, 2014), and the infancy of the literature streams concerning BM, BMI and DCs in tourism research and particularly tourism crisis management (Breier et al., 2021; Jiang et al., 2021a).

A multiple case study design is preferred over a single-case study design because this study strives to obtain rich data by conducting a comparative analysis (Yin, 2014) among entrepreneurs who were actively adjusting their BMs by exploring new possibilities during the crisis. Yin (2014) claims that the findings from case studies cannot be generalized to larger populations, because case selection informs the contribution of cases to build theories. A purposeful theoretical sampling approach was followed (Eisenhardt, 1989) to include the cases that are regarded to have a high potential to answer the research question and build theory (Yin, 2014). Given the number of cases, a minimum number of five cases (Miles, Huberman, & Saldaña, 2014 ; Yin, 2014) or a range between four to ten cases is suggested (Eisenhardt, 1989). The selection relied on the first author's pre-fieldwork of participating in a tourism local workshop just before the crisis hit, meeting with two researchers who had worked in this context previously, and meeting with Tromsø municipality about projects related to reviving the destination. The selection also referred to the authors' familiarity with the context and the most recent relevant news from the local press, the web pages and social media of the regional

destination management organizations, and the Norwegian Hospitality Association (NHO).

To gain information about the potential cases, the content of their web pages and blogs were also explored. Seven cases were selected by reference to entrepreneurs who own companies operating in nature tourism in northern Norway to attain a deep understanding of the main differences and similarities among them in terms of how they address the crisis (Eisenhardt & Graebner, 2007; Van Burg et al., 2020; Yin, 2014). The context of nature tourism was considered relevant due to the importance of this form of tourism in the region (Lee et al., 2017), which is highly vulnerable to global crises as a result of its dependence on international tourists (Seeler et al., 2021). These cases had other common elements: being active during summer 2020 (products and/or COVID measurements and/or new cancellation policies), surviving at least the first year of the crisis, and hence being in the process of building resilience, dynamically applying changes to their BMs, and agreeing to contribute to this research.

Along with Eriksson (2014), who emphasized the importance of time span in DC studies to address change as a cornerstone, this study reflects on the potential of a longitudinal qualitative approach. This approach has the potential to capture the dynamic and learning aspects inherent to the DCs on which resilient BMs can be built. Hence, this empirical study was conducted during the pandemic over 10 months (July 2020–April 2021). As the main source of primary data, 14 semi-structured interviews were conducted with the entrepreneurs (informants) as the key persons in charge of designing and adapting new BMs, which took place over two rounds. Secondary data were also collected by reviewing the contents of cases' webpages, reports, social media (the most recent posts), personal blogs, and press to enable evidence convergence when performing an analysis of the primary data (Yin, 2014). The interviews were conducted following a guide representing the relevant aspects of the literature. In particular, the three phases of plan, project and preparedness (Pedersen & Ritter, 2020) were used to structure the interviews. Questions concerning changes in the components of the companies' BMs (Osterwalder & Pigneur, 2010; Teece, 2010) before and during the crisis were asked. The first round took place immediately after the first reopening of the borders following the COVID-19 travel restrictions in Norway in July, August and September 2020. Given that travel restrictions have been continued, the second round was conducted during February, March and April 2021 based on insight from the first interview round together with the companies' most recent social media posts concerning new products, plans and strategies. The interviews from the first round lasted between 1 and 1.5 h, while the second-round interviews each lasted an average of 30 min. All interviews were conducted online via Zoom and then transcribed. Table 1 shows a summary of case characteristics.

The data analysis consisted of a thematic analysis, and NVivo 12 was applied for coding both primary and secondary data as the aim was to recognize systematically relevant themes in data to set the stage for further data analysis, answer the research question and generate theory (Charmaz, 2014; Saunders, Lewis, & Thornhill, 2019). GT coding and memo-writing were followed as suggested by Charmaz (2014). Beginning with the within-case analysis, the first coding cycle was carried out through open coding to provide interpretive labels (Corbin & Strauss, 2008). The initial labels (open codes) were mostly based on their relevance to the research question, prior literature and the interview guide or they may simply have emerged from the data during case analysis

Table 1. Case description summary.

Case's name	Entrepreneur's background	Number of employees*	Growth stage	Main products	Informant role	Source of data
Alpha	The entrepreneur has been a bird watcher and architect. Inspired by a study trip to Vardø in 2005, he decided to move to Vardø and establish his company in 2009 by focusing on nature-based architecture, promoting the region as a birding destination, and encouraging community engagement. He established a new company in 2020, especially for tourism-related operations.	3	Business in growth/ Start-up	Nature guided tours, travel packages, digital birding tours, Nature-based architecture	Founder	Two interviews, press and social media
Beta	The entrepreneur has an international background and established his company in 2015 with the idea to buy used vans, converted them to camper vans, and rented them out to nature lovers who wish to drive carbon neutral, as the company contributes to an African solar power project by providing electricity and jobs for the nearby society.	5	Business in growth	Camper rentals	Founder	Two interviews, three webpages, blogs and social media
Gamma	Two local entrepreneurs who were raised in Skjervøy and are highly interested in nature and animals established the company in 2019 to offer nature-based activities.	2	Start-up	Whale and wildlife safari, cruise trips, hiking tours	Co-founder	Two interviews
Delta	A team who were enthusiastic about the outdoors established the company in 2015. Their focus was on a conjoint effort to market the destination and promote the Lyngen region.	1	Business in growth	Accommodation, snowmobile, northern light and whale safari, distillery guided tours	Co-founder	Two interviews
Epsilon	The entrepreneur has an international background and established his company in 2016 in Tromsø as a travel operator focused on maritime activities. Later on, he expanded the business to become a destination management company.	9	Business in growth	Hiking, sightseeing, fishing and sailing tours, northern light and whale safari, event arrangement	Founder	Two interviews, webpage, social media and press
Zeta	The entrepreneur has an international background and together with two friends established a small start-up in 2015 with one vehicle from their homes to offer nature-based products and connect the guests to the fragile wilderness.	4	Business in growth	Travel packages, online photography courses, northern light safari, ice fishing and nature hike tours, equipment rentals	Co-founder	Two interviews, webpage, and social media
Eta	As a family business, the company was originally established in 1989 in Andenes by two scientists to offer whale watching experience. Later, the entrepreneur's family bought the company's shares (75%) and a boat to make it suitable for whale safari instead of whaling. He was working as the captain on board since he was a teenager.	7	Incumbent	Whale safari, restaurant, accommodation, museum tours	Board member	Two interviews, internal reports, webpage, and social media

* From www.regnskapstall.no.

(Eisenhardt, 1989). For instance, given the literature and Teece's (2007) framework, the perception of opportunity and threats as well as changes to BM components provided useful insights into the coding procedure. Next, to search for patterns and themes and decide on which initial codes can answer the research question, focused coding was performed as the second coding cycle to make cross-case comparisons underlying the main themes, patterns, and categories. For this purpose, several memos were also developed at two coding stages concerning the relationships among the codes both within and across cases, for instance, the memos concerning the first impression of focused codes and comparing actual changes to promised changes. As such, the initial open codes were merged, revised, deducted, and categorized based on their relevance, for example, a variety of codes related to new products or any change in products were merged and categorized using the two main codes of BMIs or BM adjustment (BMAs). For better illustration see [Figure 1](#), which shows the structure of data in terms of first and second-order themes identified across the data analysis (coding) in addition to three main aggregate categories, resource-, market- and technology-oriented practices.

Findings

This chapter strives to present the main findings concerning how tourism entrepreneurs have addressed this crisis by changing their BMs by way of building and applying their DCs. Relying on the findings discovered at two stages during this crisis, a comprehensive picture is illustrated in terms of the various DCs that lead to BM changes over time. The recognized DC-based practices are explained as, resource-, market- or technology-related practices by reference to BMI (innovations) or any incremental change to the existing BM elements (adjustments). [Figure 2](#) is a graphical illustration of the main findings and [Tables 2–4](#) present several quotations from the interviews to explain DCs, practices, BM changes, and interrelated practices.

Resource-related practices

Resource-related practices and the consequent BM changes are illustrated in detail in [Table 2](#), which shows that the DC-based entrepreneurial practices that are inherently resource-based are the most crucial and are characterized by five practices: resource transformation, new human resource (HR) practice development, building slack financial resources, development of more efficient ways of doing business, and using and managing knowledge. Resource transformation practices explain how agile a company is in aligning its BM with certain new opportunities or altering its resource base to switch to a new business area. Almost all the cases had to cultivate such capabilities of changing their BMs primarily by adjusting value creation, delivery and capture and then by innovating the value proposition. This practice led in one case, to the creation of a new BM in addition to the existing BM.

The next imperative practice, employed by almost all cases, focuses on HR and explicates how companies are required to develop new HR management practices to overcome the crisis. Here, the DCs mostly set the stage for the adjustments in value creation and delivery. To overcome the crisis, three cases emphasized the importance of having slack financial resources in terms of raising extra funding either externally through

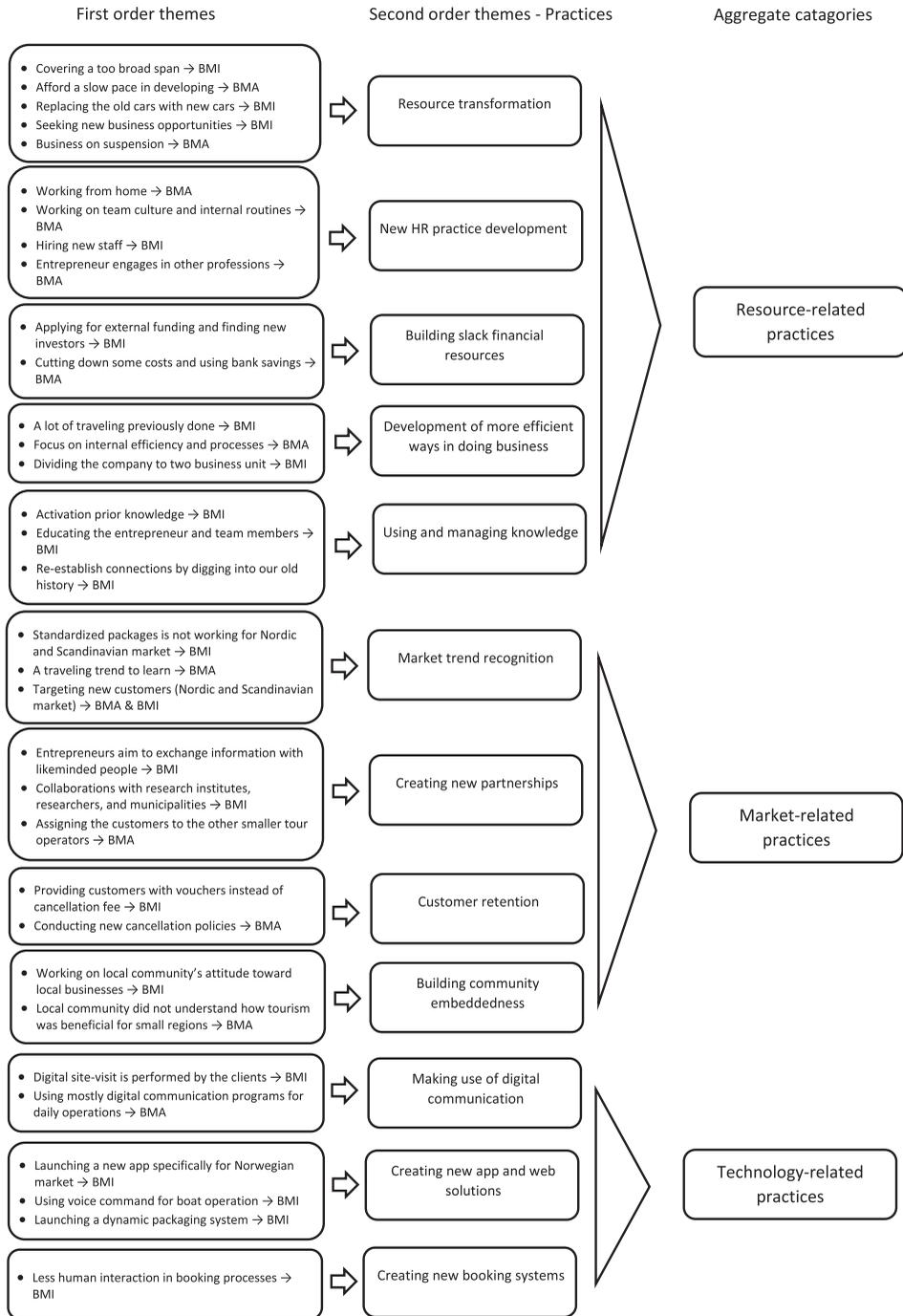


Figure 1. The structure of data in terms of relevant themes.

innovation grants (innovations) or internally through prior savings (adjustments). Among the resource-related practices, the two practices of knowledge management and the development of more efficient ways of doing business more than others



Figure 2. The framework of DC-based practices underlying BMAs and BMIs.

Table 2. Resource-related practices and the consequent BM changes.

Resource-related practices	DC type	Examples and quotes	BM Changes	Interrelated practices
Resource transformation	Innovative	Alpha used to cover a too broad span before the crisis, by performing both architecture and tourism activities.	<i>A new BM:</i> is emerged for tourism-related operations.	Development of more efficient ways of doing business
	Adaptive	"We are on right approach in a less critical situation, ... , we don't have many running expenses, ... , we just continue doing what we have already been planning to do" (Alpha).	<i>Adjustment in value creation, delivery, and capture:</i> the tourism business unit can afford a slow pace in development and instead the focus can be geared toward the nature-based architecture business meanwhile.*	New HR practice development, Using and managing knowledge
	Innovative	"We are completely depending on international guests" (Beta) There are not so many rentals now after the summer of 2020, thus old cars can be sold to buy new ones when demand rises again.	<i>Innovation in value proposition:</i> replacing the old cars with new cars to offer higher quality service.	Market trend recognition
	Adaptive-innovative	Beta seeks new business opportunities due to few rentals; "we always had the idea to make a sauna on a trailer but had never time and opportunity to do it, now we have nothing else to do".*	<i>Innovation in value proposition:</i> building a portable sauna as a new product.* <i>Adjustment in value capture:</i> due to fewer driven kilometers, the price company used to pay to neutralize carbon emissions went significantly down.*	Market trend recognition
	Innovative	Tourism activities have been stopped; therefore, Gamma has decided to switch to other business areas.*	<i>Innovation in value proposition and capture:</i> applying the former whale safari boat to collect water samples for a research institute.*	New HR practice development, Creating new partnerships
	Adaptive	"We have spent less money on marketing, everything on suspension, effective with our resources ... a more profitable operation in the future" (Delta).	<i>Adjustment in value capture:</i> spending less on marketing.	Development of more efficient ways of doing business
	Adaptive	"... this was completely useless to try to sell something to Norwegians who never have been buying" (Zeta).	<i>Adjustment in value creation and delivery:</i> focusing on next winter and closing all tours in summer 2020.	New HR practice development, Building slack financial resources
	Adaptive	Eta has stopped cooperation with a design company making commercials.	<i>Adjustment in value capture:</i> spending less on marketing.	Building slack financial resources
New HR practice development	Adaptive	Pandemic has forced people to work from home (Alpha).	<i>Adjustment in value creation and delivery:</i> following a flexible approach as it is preferred by the employees.	Making use of digital communication
	Adaptive	"We can be more detailed in operation ... more efficient in terms of how many people activating in the processes ... to work through internal routines" (Epsilon).	<i>Adjustment in value creation and delivery:</i> laying off some of the personnel and concentrating on efficient future HR planning.*	Development of more efficient ways of doing business

(Continued)

Table 2. Continued.

Resource-related practices	DC type	Examples and quotes	BM Changes	Interrelated practices
Building slack financial resources		Zeta points to the work environment in which employees are prepared for grappling with similar future adversities. "We had one guide who we kept, offered him the minimum salary in case we get tours".* "There are always things to do and have things ready for reopening" (Eta).		
	Innovative	"The new team is more specialized and knowledgeable" (Epsilon).*	<i>Innovation in value creation and delivery:</i> replacing the old team with a new one to conduct new changes across.*	Creating new apps and web solutions*
	Adaptive	Epsilon has been intensively working on team culture to motivate personnel.*	<i>Adjustment in value creation and delivery:</i> "the feeling of safety and community allows for innovation".	
	Adaptive	The founder has started to earn her/herself living meanwhile by engaging in other professions (not tourism-related) (Alpha, Gamma, Delta).*	<i>Adjustment in value capture:</i> The founder is seeking other sources of income.*	Resource transformation, Building slack financial resources
	Innovative	"Cannot make it without new finance", Epsilon has applied for external funding several times and received such funding.*	<i>Innovation in value capture:</i> developing a road map to search for new investors, writing several applications to receive innovation grants.*	Creating new partnerships
	Adaptive	"We had extra money for launching a new destination (in Finland), instead we decided to not do it now" (Zeta). To decrease costs, Zeta has made a deal with the landlord to sub-rent the office.*	<i>Adjustment in value creation and capture:</i> picking up a slow growth.*	Resource transformation
	Innovative	Zeta seeks to move toward the Finnish market by finding new investors; "for product expansion to Finland, Innovation Norway is not going to fund it, ... , we can apply for funding from Business Finland which is similar to Innovation Norway".*	<i>Innovation in value proposition, creation and capture:</i> creating new products and exploring new grants from abroad.*	Creating new partnerships
	Adaptive	"After the 2008 financial crisis, we had discussed putting some money aside, if you have a bad season, you need to be able to survive until the next year" (Eta).	<i>Adjustment in value capture:</i> using the profit earned earlier to survive the crisis and staying on hold.	
Development of more efficient ways of doing business	Innovative	"Innovation Norway had this to apply for money to start new projects and keeping people in the company" (Eta).*	<i>Innovation in value creation and capture:</i> applying for and receiving an innovation grant to try new concepts (a research project and eco-certification).*	Creating new partnerships
	Innovative	Being critical about the excessive amounts of short-term flights (Alpha); "living in a small place like Vardø and having clients all over different countries meant that there was a lot of travel time involved".	<i>Innovation in value creation and delivery:</i> moving the architecture business from Vardø to Copenhagen and Tromsø to reduce traveling and looking for potential clients in Nordics.	Resource transformation

(Continued)

Table 2. Continued.

Resource-related practices	DC type	Examples and quotes	BM Changes	Interrelated practices
	Adaptive	"In terms of efficiency metrics, we were growing fast ... lost 20% efficiency ... any crisis forces organizations to be more efficient" (Epsilon).	<i>Adjustment in value creation and delivery:</i> focusing on internal efficiency and processes.	
	Innovative	"In March, we built strategies for how to go about the coming 6–12 to 36 months, ... , our company has been doing marketing, sales, and T&D; two different companies" (Epsilon). "We tried to put the attention to a team for building the future concept that will be strong for the next decade, ... , we had a new BM".*	<i>A new BM:</i> splitting the company into two; "each department can be more specialized; rethinking an innovation".	New HR practice development
	Innovative	"Because of that extreme time, innovation has become necessary rather than an option" (Epsilon).*	<i>Innovation in value proposition and creation:</i> designing new products, new web solutions, an app, and a brand.* <i>Innovation in value capture:</i> preparing applications to receive grants and making new partners.*	Creating new partnerships, Market trend recognition
Using and managing knowledge	Innovative	By already traveling around the world, the founder has grasped a good overview of the natural habitats and birding culture even without visiting a particular site (Alpha).	<i>Innovation in value creation and delivery:</i> doing the projects by digital site-visit filmed by the client; "specialist knowledge becomes even more relevant".	Resource transformation, Market trend recognition
	Innovative	"I have to learn many things last year, to deal with databases, ... , how technology solution could capture the entire need of the user and our team is taking new courses" (Epsilon).*	<i>Innovation in value creation and delivery:</i> Educating team members and the founder.*	New HR practice development, Creating a new apps and web solutions*
	Innovative	By digging into historical roots, Alpha has realized that the region has a deep historical connection to Istanbul, thus it considers targeting future customers from Istanbul; "we don't have to invent things from scratch, ... , the Byzantine empire was based in Istanbul and the emperor lifeguards were called Varangians; didn't just happen by chance".	<i>Innovation in value proposition:</i> offering a new product based on the historical connection between the region and Istanbul.	Market trend recognition

*: Indicating those DCs and changes that are developed most recently as the second round of data suggests.

resulted in the implementation of innovations, as the cases needed to innovatively change value proposition, creation and capture. These two practices, which mostly stimulate BMIs represent innovative DCs, whereas new HR practices development underlies adaptive DCs. Furthermore, the two practices of resource transformation and building slack financial resources result from both adaptive and innovative DCs and set the stage for both BMIs and BMAs equally, thus such DCs can be called adaptive-innovative DCs.

Market-related practices

Table 3 demonstrates market-related practices alongside BM changes. These business practices include market trend recognition, creating new partnerships, customer retention, and building community embeddedness. Given market trend recognition, all seven cases were able to recognize new market trends; here changes mostly informed value creation for the new domestic market and were either extension of current products or inventions of new offers based on the needs and desires of the new guest segment. Interestingly, the majority of cases (five) further cultivated the capability to make new partners during the pandemic as suggested by the second data collection round. This cultivation might have occurred because the task of acquiring such an innovative capability and enacting the related practices requires time; since this crisis has lasted much longer than expected, and stopped most tourism activities, it has thus allowed for more free time to be invested in finding new partners to address the crisis collectively and innovatively alter value creation and delivery. This entrepreneurial practice arises from having an innovative DC, which mostly results in BMIs.

The next practice is focused on retaining the customers who booked their trips either before or during the crisis. For this purpose, three cases had to make certain adjustments in their terms and conditions. Two cases pointed to the importance of building community embeddedness through either moving towards the local market (innovation in value proposition) or involving locals as a critical aspect of the value creation and delivery processes. Market trend recognition and customer retention underpin adaptive capabilities, which mostly inform BMAs while building community embeddedness arises from an adaptive-innovative capability.

Technology-related practices

Technology-related entrepreneurial practices are shown in Table 4, where the findings suggest that the companies needed to apply technology by conducting these three practices: making use of digital communication, creating new booking systems, and developing new apps and web solutions. The former practice is based on an adaptive capability and has been developed by obtaining digital communication skills to practice home officing and new methods of communication. An exception is Alpha, which started to use digital site visits as a new alternative to physical site visits, thus the former value creation has been changed innovatively to generate a new competitive advantage.

Based on the second data round, Epsilon elaborated on how the company has invested in state-of-the-art technological solutions to deliver an innovative value proposition (a new app for a new Norwegian segment) as well as innovatively change value creation,

Table 3. Market-related practices and the consequent BM changes.

Market-related practices	DC type	Examples and quotes	BM changes	Interrelated practices
Market trend recognition	Innovative	Standardized packages do not work for the Norwegian market (Alpha).	<i>Innovation in value proposition:</i> packaging and promoting the storytelling product as an authentic tourism experience.	Creating new partnerships*
	Adaptive	The traveling trend to learn and become insightful is increasing (Alpha).	<i>Adjustment in value creation and delivery:</i> “it is an opportunity to adjust how many and what kind of guests and qualities we want to sell”.	
	Adaptive	By renting a camper van, guests did not need to move as owning a place where they can stay for 10 days (Beta); “Norwegians were more on the budget when started to travel within Norway, booked with us”.	<i>Adjustment in value creation and delivery:</i> a lot of Norwegians, much more than in recent years, have booked their trip in summer of 2020.	
	Adaptive	“The big city tourism will lose after Corona, and the segments of people going to nature away from cities would grow, ... , the whole northern Norway will be a good destination” (Gamma).	<i>Adjustment in value creation and delivery:</i> “growing adventure in people, to bring them on activities”.	
	Adaptive	“I have been thinking for years how to develop toward Finnish market, but we didn’t find the way, this summer was the perfect opportunity” (Delta).	<i>Adjustment in value creation and delivery:</i> “we can take advantage of this for years, even when the Corona disappears”.	Resource transformation
	Innovative	“ ... it is hard to persuade Norwegians to hire a guide ... if you give them something that they can get a certificate from, it is a different value, ... ,we tried to fill different needs” (Delta).	<i>Innovation in value proposition:</i> 1. offering kayak and glacier courses; 2. electric bicycle rental; 3. promoting bucket list tourism.	Resource transformation
	Adaptive-innovative	A Norwegian guest spends less than an international guest, “Norwegians won’t pay to be guided in nature, ... , they appreciate logistics by a boat” (Epsilon).	<i>Innovation in value proposition:</i> launching new outdoor activities such as snow kiting and kayaking courses.* <i>Adjustment in value creation, delivery, and capture:</i> making changes in existing products and dropping the prices.	Resource transformation
	Innovative	Being highly dependent on people moving made Zeta vulnerable to the crisis, thus the company decided to diversify the product portfolio.*	<i>Innovation in value proposition:</i> 1. a new online product (photography course); 2. a new product that is not tourism-related (Café); 3. working toward a new destination with more focus on locals, and not international tourists; 4. kayak course and equipment rentals.*	Resource transformation, Creating new partnerships*

(Continued)

Table 3. Continued.

Market-related practices	DC type	Examples and quotes	BM changes	Interrelated practices
Creating new partnerships*	Adaptive	"... we never have had any Norwegians on tours, if they go hiking, they go on their own, they don't pay for it" (Zeta).	<i>Adjustment in value capture:</i> "if we would be focused on summer 2020, maybe sell a bit but not much, also the support from the government would have been less, then we could respond late to the winter"	New HR practice development, Building slack financial resources
	Adaptive	"... 25 million live in Nordic, we should focus more on this market" (Eta). Usually, 95% of the guests are from other countries, "we can exchange some of them with Norwegians but not completely".	<i>Adjustment in value creation and delivery:</i> "try to look more closely into the near market instead of bringing people from all over the world".	
	Innovative	"Entrepreneurs want to exchange information with like-minded people now that they have the time, ... , we have been doing business development rather than servicing customers" (Alpha).*	<i>Innovation in value creation and delivery:</i> tailoring and prototyping new products in collaboration with other companies; "selling the packages that we are teaming up is about how to share the region, which company will serve which part of the region".*	Resource transformation
	Innovative	Gamma has strived to make new partners survive this crisis and keep their current properties.*	<i>Innovation in value creation and delivery:</i> having signed a five-year contract with a research institute until the company can return to normal tourism operation.*	Resource transformation
	Innovative	Epsilon has started collaborations with some municipalities to offer activities for the Norwegian market.*	<i>Innovation in value creation and delivery:</i> launching an app.*	Creating new apps and web solutions*
	Adaptive	"We knew that there are two smaller companies running tours, then we have suspended everybody to them, we didn't do almost any tours" (Zeta).*	<i>Adjustment in value creation and delivery:</i> assigning customers to the other tour operators, and instead working on internal new projects.*	Resource transformation, New HR practice development
	Innovative	"Together with two other companies, we offer a whole holiday experience including accommodation, activities and café" (Zeta).*	<i>Innovation in value proposition and creation:</i> tailoring and packaging new travel experiences with two other partners.*	Resource transformation
	Innovative	Eta has started to collaborate with new international researchers and tour operators to incorporate scientific knowledge into new future products. Although the region has great potential, tourists used to take daily trips; to enhance the tourism experience and keep them longer in the area, a project was launched. *	<i>Innovation in value creation and delivery:</i> making the region a hotspot for ecotourism year-round and engaging in scientific projects.*	Resource transformation

(Continued)

Table 3. Continued.

Market-related practices	DC type	Examples and quotes	BM changes	Interrelated practices
Customer retention	Adaptive-innovative	International guests were upset about their trip being canceled due to COVID-19; thus, Beta considered the voucher arrangement by keeping the money that the guests paid upfront, that is how it could survive cashflow wise, and instead offers the guests voucher. Epsilon has designed a new liberal cancellation policy to allow customers to reschedule their trip.* "We had to come up with our own (cancellation) policies" (Zeta).	<i>Innovation in value capture</i> : providing vouchers instead of the cancellation fee. <i>Adjustment in value creation and delivery</i> : changing terms and conditions.*	Building slack financial resources
Building community embeddedness	Innovative	"The community is fighting for local businesses, [?] buying local', ... , we work on making people understand that we are also part of the local businesses, people don't understand tourism" (Gamma).	<i>Innovation in value proposition</i> : 1. working on becoming an event management company; 2. designing a new product for the local business market; "We have a deal with the municipality to offer the wilderness therapy course, help the community whom need nature".*	Creating new partnerships*
	Adaptive	"Locals were negative towards tourism, don't understand how beneficial it is ... when COVID-19 hit, locals saw how this affected everything, ... that was a serious issue because the guests didn't get a good impression" (Delta).	<i>Adjustment in value creation and delivery</i> : now, the company and the local community are on the same page to offer a proper experience.	

*: Indicating those DCs and changes that are developed most recently as the second round of data suggest

Table 4. Technology-related practices and the consequent BM changes.

Technology-related practices	DC type	Examples and quotes	BM changes	Interrelated practices
Making use of digital communication	Innovative	The related travel expenses for site-visit (architecture business unit) should be covered by the clients, thus it could make them prefer a similar local service instead of Alpha.	<i>Innovation in value creation and delivery:</i> currently site-visit as a part of the value creation process is performed by the clients, thus Alpha is competitive worldwide.	New HR practice development, Using and managing knowledge
	Adaptive	Alpha believes that the world is used to digital communication. COVID-19 makes people more aware of their choices (Zeta). It “forced us to act anything new ... to act very fast ... to develop ways of communication” (Delta).	<i>Adjustment in value creation and delivery:</i> practicing home office, and using digital communication programs	New HR practice development
Creating new apps and web solutions*	Innovative	Epsilon has designed a new app for the Norwegian market. *	<i>Innovation in value proposition:</i> launching a new app.*	Market trend recognition
	Innovative	Epsilon is working on “integrating voices into operation, voice command for everything in our company”.*	<i>Innovation in value creation and delivery:</i> designing a new technological tool for the boat safety checklist.*	Development of more efficient ways of doing business
	Innovative	“Traditionally we spent a lot of the money to take the customer’ requests to book hotels, check the operators, then package this up which takes days, all has been wasted due to inefficiency, now we take all the requests and package it up into a little engine to provide a perfect solution within a minute” (Epsilon).*	<i>Innovation in value creation delivery and capture:</i> launching a dynamic packaging system.*	Development of more efficient ways of doing business, Market trend recognition
Creating new booking systems	Innovative	Technology would replace human activities through less human interaction in booking processes (Epsilon & Eta).	<i>Innovation in value creation, delivery, and capture:</i> launching a new online booking system “we are taking technology not to remove human, ... , allows budget to be distributed to customers to lower pricing, or engage more sustainable activities”.	New HR practice development, Development of more efficient ways of doing business

*: Indicating those DCs and changes that are developed most recently as the second round of data suggests.

delivery, and capture (a new technological tool and a dynamic packaging system). Furthermore, Epsilon argued that the pandemic resulted in tourism activities remaining on-hold, and hence, it has freed up time and resources, which were transformed and targeted towards technological advancement. To remove physical interactions in booking processes and increase efficiency, two cases have launched new online booking systems. The two latter practices (creating new booking systems, apps and web solutions) resulted from innovative capabilities.

Table 5. DCs types and underlying practices with respect to BM changes across cases.

DC type	Practices	Cases						
		Alpha	Beta	Gamma	Delta	Epsilon	Zeta	Eta
Innovative	Development of more efficient ways of doing business	BMI	-	-	-	BMI	-	-
	Using and managing knowledge	BMI	-	-	-	BMI	-	-
	Creating new partnerships	BMI	-	BMI	-	BMI	BMI & BMA	BMI
	Developing new apps and web solutions	-	-	-	-	BMI	-	-
	Creating new booking systems	-	-	-	-	BMI	-	-
Adaptive	New HR practice development	BMA	-	BMA	BMA	BMI & BMA	BMA	BMA
	Market trend recognition	BMI & BMA	BMA	BMA	BMI & BMA	BMI & BMA	BMI & BMA	BMA
	Customer retention	-	BMI	-	-	BMA	BMA	-
	Making use of digital communication	BMI & BMA	-	-	BMA	-	BMA	BMA
Adaptive-innovative	Resource transformation	BMI & BMA	BMI	BMI	BMA	-	BMA	BMA
	Building slack financial resources	-	-	-	-	BMI	BMI & BMA	BMI & BMA
	Building community embeddedness	-	-	BMI	BMA	-	-	-

DCs types

As discussed previously, the findings show three types of DCs consist of innovative, adaptive and adaptive-innovative. Accordingly, Table 5 synthesizes and summarizes the findings concerning DC types and their underlying practices across the cases. Given BMIs and BMAs, Alpha, Beta, Gamma and Epsilon mostly implemented BMIs, whereas Delta, Zeta and Eta are focused mainly on BMAs. Among the 12 practices, the five practices of creating new partnerships, new HR practice development, market trend recognition, making use of digital communication and resource transformation were put into practice by almost all the cases. These practices mostly inform the application of adaptive DCs rather than innovative DCs, except for the creation of new partnerships.

Discussion

This research aimed to explore how tourism entrepreneurs change their BMs to tackle the crisis and to develop a taxonomy of DC-based entrepreneurial practices underlying BM changes. Thus, the overall purpose of the current study was to bridge the knowledge gap in terms of providing a more comprehensive understanding of what underlies a DC as integral to BM changes in the face of crisis (Inigo et al., 2017; Jiang et al., 2021b; Kump et al., 2019; Mansour et al., 2019; Mezger, 2014; Schilke et al., 2018). Hence, this study made theoretical contribution to the DC literature by further enriching the DCs perspective. As shown in Figure 2, 12 critically important DC-based practices are identified and categorized into resource-, market-, and technology-related practices. In comparison with other classifications of DCs that can be found in the literature (Inigo et al., 2017; Jiang et al., 2021b; Mansour et al., 2019; Mezger, 2014), this taxonomy discusses DCs more

thoroughly concerning their type (innovative, adaptive, or adaptive-innovative) and the underlying practices, that clarify the operationalization of the DCs that give rise to BM changes in various ways.

For instance, compared to the most recent study by Jiang et al. (2021b), which discussed resource-based practices, the current study goes beyond prior typologies by investigating the practices empirically, and also focuses on the elements of the market and technology. Prior studies pinpointed (Inigo et al., 2017; Mezger, 2014) the latter two elements in terms of sensing and seizing technological and market-based knowledge to build BMIs. In addition, the results provide a deeper understanding of the nature of DCs (Leih et al., 2015), which can vary given that BMAs result from adaptive capabilities, while BMIs rely on innovative capabilities (Jiang et al., 2021b; Saebi, 2015). Consistent with Jiang et al. (2021b), it can be concluded that even on a low scale, those cases that succeeded in developing innovative capabilities and enacting the relevant practices (for instance Beta and Gamma) signify the creation of BMIs regardless of how many practices are implemented; therefore, the nature of DCs, whether innovative or adaptive, explains BM changes.

Following prior studies (Inigo et al., 2017; Saebi, 2015), BM changes on the right side of Figure 2, are characterized as *BMAs* resulting from incremental changes and *BMIIs* resulting from radical changes in terms of the configuration of a new value proposition, which demands the alignment across BM components through the establishment of a new mechanism for value creation and capture (Mezger, 2014; Teece, 2018). The new value proposition can be configured through a new BM whose components are changed simultaneously (Mezger, 2014). Similarly, Inigo et al. (2017) highlighted radical *BMIIs* that embrace systematic changes across value propositions. Furthermore, as the findings suggest, innovations are more likely to occur when companies conduct practices that are resource- or technology-related, whereas market-related practices mostly provoke adjustments, except for the practice of creating new partnerships. Likewise, Kump et al. (2019) argued that being aware of customer needs and market trends supports an adaptive capability rather than an innovative capability. This claim is in contrast with Mezger's (2014) findings that state market-oriented practices significantly contribute to *BMIIs*. Nonetheless, the importance of integrating external competences and resources through the creation of new partnerships is highlighted by reference to *BMIIs* (Mezger, 2014) and supported by our research through reflection on the temporal aspect of DCs.

This research also contributes to the DC literature by reflecting on the temporal aspects of DCs (Eriksson, 2014; Jiang et al., 2021b; Schilke et al., 2018), which is accomplished by examining DCs for two stages during this crisis. Five informants claimed that the pandemic had a long duration and that being unable to engage in any international tourism activities made more time available to encourage innovations, although two informants asserted at their first interview that they could not find much free time to consider innovations. While the changes during the first stage mostly informed adjustments, later in the crisis, innovations were more prevalent than adjustments. This finding is in line with those of a recent study by Breier et al. (2021), which regarded free time as a driver of *BMIIs*. In addition, Schilke et al. (2018) argued that time is a critical factor regarding the evolution of the DCs underlying changes since DCs grow as long as organizations acquire experience through learning-by-doing. Considering this temporal aspect, two innovative practices, creating new partnerships and creating new apps and web solutions,

which also mainly underlie BMIs, were developed further during this crisis, as the second round of data denotes, whereas the four practices of new HR practice development, resource transformation, using and managing knowledge, and building slack financial resources were invoked when the crisis hit and then enhanced afterward, as demonstrated by the second interview round.

Given BMIs, first, start-ups and then businesses in growth are notably seeking new opportunities for innovations (more so than the incumbent), because it is usually easier for smaller firms to transform, as they can adapt more flexibly (Jiang et al., 2019) and have “fewer fixed assets to redeploy, and fewer established positions to re-engineer” (Leih et al., 2015, p. 32). Incumbents, however, have learned how to adapt to exogenous shocks from their experience of previous recessions (Cucculelli & Peruzzi, 2020); such experience is highlighted by Eta, that learned how to allocate financial resources efficiently after experiencing the 2008 financial crisis. Relatedly, companies that hold limited slack resources respond to crises reactively rather than proactively (Jiang et al., 2021b).

To address the matter of recovery in general, the cases have pursued various approaches. While some changed their market focus from international to domestic guests, others concentrated on BMAs and mobilizing their resources for winter 2021. Although domestic visitors can accelerate recovery and contribute significantly to building resilience, returning to business-as-usual may lead to overcompensation for the revenue that is lost due to travel restrictions (Gössling et al., 2020). Moreover, the great dependence of Arctic tourism on international arrivals makes it vulnerable to adversities that result in border closure. Although several cases admit that they had always considered hosting domestic guests and customizing offers, none had tried to approach this segment before the pandemic, meaning that if companies had targeted domestic guests previously, the companies could have adapted more efficiently. Such a finding corresponds to the study by Ritter and Pedersen (2020), who indicated that some DC-based practices that were understood as complex and costly before this crisis was suddenly perceived as practical and critical during this crisis. Indeed, this issue also demands collective dedication from all stakeholders to promote Arctic winter tourism for domestic guests to not only ensure resilience at the firm and industry levels but also try to prevent a return to a business-as-usual approach in which overcompensation could pose additional challenges. Similarly, Seeler et al. (2021) argued that the future recovery and sustainability of Norwegian tourism strongly depends on designing a new value proposition for domestic guests to mitigate the industry’s vulnerability as a result of heavy reliance on international guests.

Conclusions

This research strives to examine how tourism entrepreneurs in Arctic change their BMs in light of their DCs to tackle the crisis and enhance resilience. Relying on the temporal qualitative data from seven small companies, the results illustrate a comprehensive overview of various DCs (innovative, adaptive, or adaptive-innovative) that are operationalized through various practices and lead to either BMAs or BMIs over time. This research identifies 12 DC-based entrepreneurial practices in three areas: resource, market, and technology. Thus, this study contributes to the literature concerning BMI and DCs in tourism crisis management. However, this research has some limitations in addition to its contributions.

Due to the small number of cases, which were small nature tourism companies in the Arctic, the findings might not be applicable to larger organizations or settings other than tourism. Considering that the entire tourism industry has grappled with the pandemic, more research is required in a broader sense. Given the methodology and pandemic, the current research faces several challenges and inevitable shortcomings that can be addressed by future endeavors. The research results rely mainly on online interviews, as the interviewer could not examine the data further through observation. Hence, researchers can bridge such gaps after the pandemic by implementing a mixture of data collection methods to investigate the performance of resilient BMs post-pandemic, which is as important as investigating such BMs during the pandemic. Moreover, more research is needed to determine whether transformations during the crisis would remain permanently postcrisis even after returning to normal following the crisis.

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Appendix 1: Interview guides (Articles 2 & 3)

Article 2: interview guide

BM in general

BM elements	Explanation	Potential questions
value proposition	Main purpose of existence, Customers (segments and targeting), offering (service or products),	Please explain how your company was established. (What is the story behind your company establishment – if you want to describe very briefly your company how would you describe that...). [The story can refer to a problem as the reason for establishment (solution)]
		What do you think about your business model when it comes to its development stage now (new, developing, mature and developed completely)?
		What is the difference between your offer and competitors' offer? (In other words, why a tourist should choose you over others? [competitive advantage] <ul style="list-style-type: none"> Do you think that this (possible) difference is visible from the point of view of the tourist? Or do you think that it is difficult for a tourist to see the difference?
value creation and capturing	Resources, Activities, Technologies, cost and revenue (in general)	Do you feel that the resources (human, knowledge, skill, competence, financial, technological) that you have are sufficient for all your offers? Do you feel that in addition to these there are other resources and competence that are needed for a high-quality offer? If so, which ones and how they can be obtained?
		<ul style="list-style-type: none"> How did you develop and promote your offers (product/services)? Can you explain your previous experience? (Explanation of the ongoing processes, stakeholders involved and idea generation) According to your experience, what are the main barriers and facilitators to develop high quality offers?
		Let's talk about the company's revenue (not in numbers). Which season (winter or summer) is more beneficial ...are you performing all the year or your activities are more seasonal? [having economic sustainability]
value network	Stakeholders	First let me explain what I mean when I say "stakeholders". (And then I explain) <ul style="list-style-type: none"> Do have several networks for developing various offers?

Sustainable BM, change and identifying the drivers

SBM approach	Explanation	Potential questions
Sustainability-orientation	eco-efficiency, avoidance of unacceptable risks, social impacts	First of all, I want to know your understanding about sustainability (in general and in practice), what do you think please tell me; do you have concerns personally as a founder or manager ? [driver] <ul style="list-style-type: none"> To what extent do you believe that your company's sustainable performance is affected by your own initiative as a founder?[driver] Do you believe that your business has some responsibility toward the environment and the animals and in general the context you sell your activities? How would you describe it.

SBM approach	Explanation	Potential questions
		<ul style="list-style-type: none"> • Do you believe that to stay in the market [economic driver] companies need to perform sustainably and do more effort and invest more money and why, please explain with some examples. [driver] • Have you ever thought about your sustainable performance as a way of marketing to promote your offers? [economic driver] I want your comments on this whether you promote your offers based on your real sustainable orientation (real performance) ... { Do you think that your efforts to preserve nature are somehow recognizable and visible for the tourists when it comes to comparison with other operator in your area? } • Do you think that being sustainable will make your company either stronger or weaker in compare with your competitors? [driver] [barrier] • I want you to name factors (in your opinion) that can either hinder or facilitate sustainable performance and development of more sustainable activities, you can answer this question based on your experience in this business... <p>What eco-friendly activities or tasks (voluntarily and obligatory) are being done in the company. [to understand whether the company act reactively or proactively] [environmental sustainability]</p> <ul style="list-style-type: none"> • How does your business try to use natural resources efficiently? • What is the most important achievement of the company in operating a more responsible and “green” way? <p>What is your point of view about considering the rights (wellbeing) of local community when developing a new offer or entering a new market? [social sustainability]</p> <ul style="list-style-type: none"> • How do you try to satisfy local community’ interests? Is that just customers that matters to you or you also take into consideration the benefits of your people (society) <p>I would like to know whether your concerns regarding sustainability leads to employ people with particular skills and experiences, please reflect your idea about your choice of staff when it comes to a sustainable performance...</p> <ul style="list-style-type: none"> • Do you use specific training for your staff to secure safety, sustainable performance (people and company) and having a good understanding of the natural-cultural environment they are working in. [change] <p>Have you ever targeted customers who have serious concerns regarding sustainability that are willing to pay even more to get a product/service which is offered in a more sustainable way? I mean do you have such customers or how much is that important for you to have such customers? [driver]</p>
Extended value creation	Generate value for market and non-market related stakeholders (monetary and non-monetary)	<p>Do you think that the tourists joining your tours learn something new about nature and animals?</p> <ul style="list-style-type: none"> • Do you think that the tourists get inspired after the trip to act more responsible and be more respectful toward nature and wildlife? If yes, please tell me whether you got any feedbacks from them after using your offers and consuming your product/service. <p>Do you see any potential negative impact of your offered activities on environment and animals? If so, can you please tell me which potential negative impact you recognized. [environmental sustainability]</p> <ul style="list-style-type: none"> • How does your company try to eliminate these possible negative impacts? Have you succeeded to reduce your potential negative impacts on the nature, for example reduce emissions or wastes... • Have you tried to develop a product/service which is less harmful than your previous ones or even your competitors’ offers? If so, please explain your point and if not please tell me whether you have plans to do so...[change]

SBM approach	Explanation	Potential questions
		<ul style="list-style-type: none"> • I am wondering whether in the past you gave up on offering an activity or a product because you believed that it could be somehow harmful to nature within a sensitive context (location)? (or plan to do so...) [change] • Do you have particular guidelines to prepare customer before trip in order to behave responsible as they supposed to experience the natural-cultural heritage and receive your offer? [environmental sustainability] • Do you have particular guidelines for you guides and staff in favor of nature and acting responsible? • (If the company engages in motorized-based activities then) Do you have particular guidelines in this regard? [environmental sustainability] <p>I would like to know whether it occurred to you that you had to arrange an activity within a protected area or facing vulnerable situation (national parks, cultural heritage, endangered species...), if yes please explain your experience and how did you form that activity in a more sustainable way... [environmental sustainability]</p> <p>Are you using your local resources (people) to develop your offers? If so, I would like you explain more on this. [social sustainability] [environmental sustainability]</p> <ul style="list-style-type: none"> • What is your priority when you intend to employ? do you follow specific strategy for example to give the priority to local people, to what extent, I would like to know <p>Similarly, I would like to know whether you have the same perspective when you are choosing your partners, and suppliers in your network? For example it can happen that you had the opportunity to choose a service provider (not local) with better quality, but you prefer to work with a local provider (local purchasing) instead...[social sustainability]</p> <p>Generally speaking, do you think that for a company being “green” is equal to being more costly? [barrier] What about your company, have you ever sacrificed monetary purposes for the sake of environment or community?</p> <ul style="list-style-type: none"> • Do you think that if your business has (or will have in the future) a very clear green profile, this would lead to the possibility to operate with higher prices and this make your offer more attractive to the tourists that convince them to pay more for your offer?? [driver] please provide an example if possible. • Does any of your eco-friendly actions lead to savings or cost reduction or revenue increase (recycling, energy efficiency, innovative use of natural resources)? If yes, please explain [driver]
Systemic thinking	Boundary-spanning activity system, planned vs. realized BM through measuring outcomes (potential deviations), key performance indicators and goals	<p>I want you explain your goals which are related to sustainability concerns [environmental and sustainability]</p> <ul style="list-style-type: none"> • Have you had sustainability related goals and planned to achieve, but you could not succeed? If so, I would like to know why you have failed? [barrier] If not I want to know about the success factors and how did you measure your success, have you defined any specific indicators to measure your performance and your achievements? [performance indicator] <p>Have you tried to change something internally (staff, new investments, new knowledge, culture, your management style, strategy, policy, ...) or externally (partners and targeted customers) in order to perform in more sustainable way? If so, please explain the things you changed, please briefly explain the process and activities that you went through; and if not, what is your opinion about needed arrangements (support, conditions, motivations) to promote activities in more sustainable way? [change]</p>

SBM approach	Explanation	Potential questions
		<p>Do you develop reports (documents) which focus on your sustainability concerns (on a regular basis)? If yes please tell me what motivates you to do so, if not please tell me your point of view about its necessity in your business perhaps in future [performance indicator] [driver]</p> <ul style="list-style-type: none"> • How does it matter to you that public become aware of your green performance in favor of nature and human? ...[performance indicator] [driver] • Have you received any positive or negative feedback from your customers, partners, locals about your way of doing your business, your activities and their consequences in general and when it comes to acting in a more sustainable way... • How did you react to those feedback? Please give me some examples... can these feedback be considered as something that encouraged you for being more sustainable...[driver]
Stakeholder integration	Social interaction, align the interests and goals of different actors, co-creation, stakeholder needs	<p>How your business prioritize various stakeholders and why do you make it like this? Please tell me more.</p> <ul style="list-style-type: none"> • Have you tried to search for partners who could probably be more supportive (useful) when it comes to developing a product/service in more sustainable way? Have you ever given priority to the partners for having for example environmental related certificate (clear green profile) or clear sustainability concerns? ...[environmental sustainability] [social sustainability] • Have you experienced initiatives from your partners, destination and stakeholders' side for being more sustainable? [driver] If so, how did you manage to react and follow them, or was it aligned with your company's goals and how did you take that? <p>How did you understand risks and challenges when it comes to interact with different stakeholders? And how did you try to reduce the risks?</p> <ul style="list-style-type: none"> • Have you experienced conflicts between your company's sustainability goals and one of your stakeholders like investors, suppliers, kommune (destination level) and customers? And how do you manage these kinds of conflicts and how you deal with various interests from various parties? [barrier] <p>Do you also cooperate with local destination organization and other competitors (operators) to promote your offers in more sustainable way? [driver] If so, please describe your cooperation, if not, I want to know your point of view about such potential cooperation and if it would be useful and considered as a motivation for businesses like you.</p> <ul style="list-style-type: none"> • Have you engaged in planning and decision making at destination level with related organization? If so, please explain more on your active role as an operator? did you get inspired after such arrangement to do something new and change something in your business? [driver] [change]

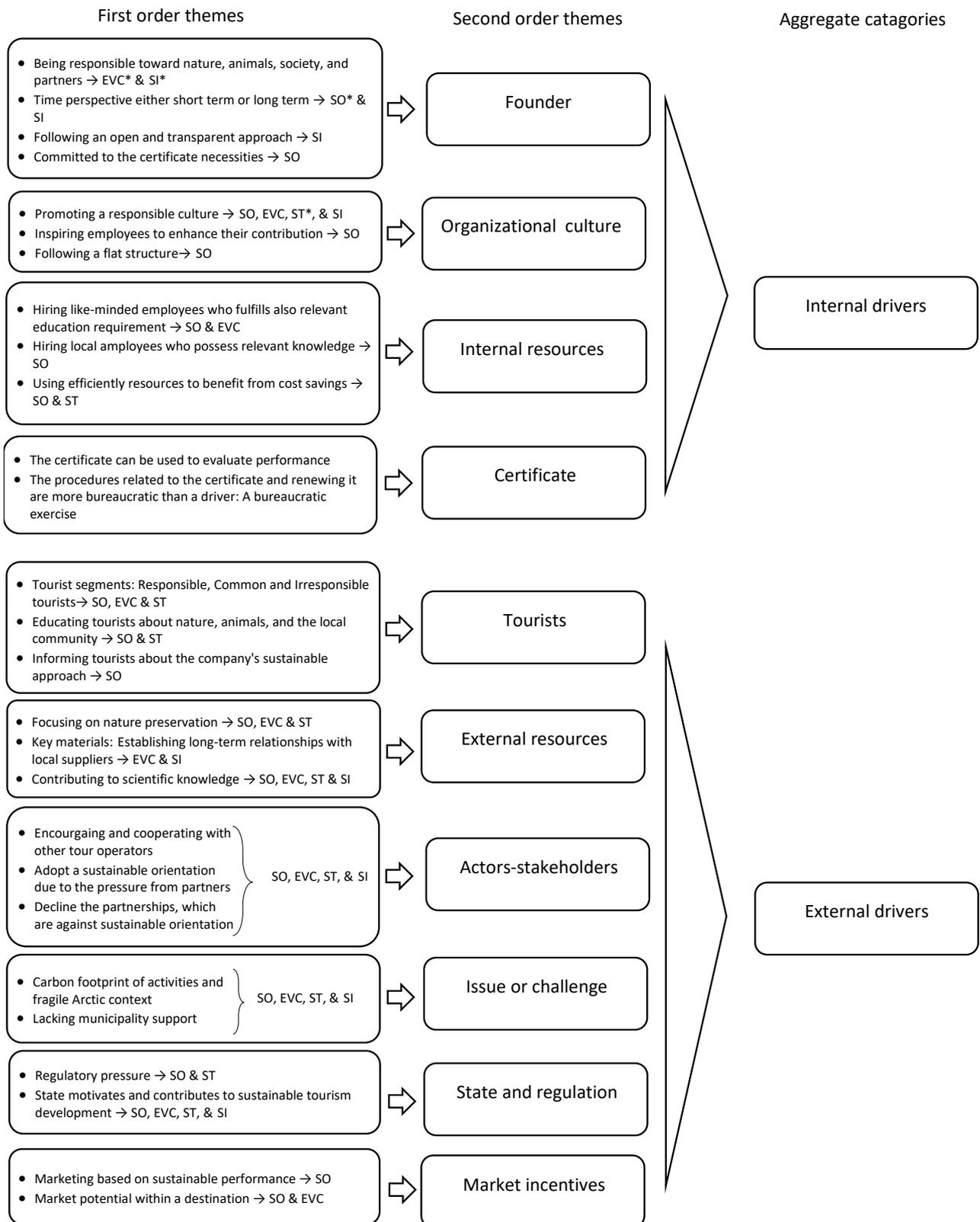
Article 3: interview guide

5P and its description	Qs
1.Position	<p>Grand tour</p> <p>1. Please introduce yourself, your position and briefly the company, how it was established?</p> <p>2. How do you explain business success in general? Please explain it briefly in your own words.</p> <p>Sustainability</p> <p>3. I want you explain the relationship of your business with nature, animals, society and locals and the responsibility toward them?</p> <p>4. Let us talk a bit more about sustainability and the concerns about nature, animals and local community; to what extent do you think such concerns are integrated into your business and taken into consideration within your decision-makings?</p> <p>Stakeholders</p> <p>5. How do you find the reaction of people in your network to the Covid-19; let's start with tours operators, ... your partners (suppliers), ... customers, shareholders, destination organizations (Visit Lyngen, Visit Tromsø, Visit Norway), ... kommune and ... local people?</p>
2.Plan	<p>Opportunity</p> <p>6. Have you ever thought about corona situation as an opportunity for example to raise awareness and rebuild more sustainability? how come please tell me more.</p> <p>7. What about corona as an opportunity for innovations and transformations within your company or within the industry, has it occurred to you such an idea? If so, please tell me about it.</p> <p>Stakeholders</p> <p>8. How do you explain the role of people (tours operators, ... your partners (suppliers), ... destination organizations (visit Tromsø, visit Norway), ... kommune and ... locals) in your network to assist you in managing the crisis and recovery phase (in terms of facilitating or hindering or even nothing)?</p> <p>9. Whom (which organizations) do you expect to facilitate your recovery? Please tell me about your expectations.</p> <p>10. I want to know more about the recovery strategies and plans that you (or others) are implementing, do you believe that they are effective enough to get recovered from corona situation? I would like to know your own perception and experience.</p>
3.Perspective	<p>Employees</p> <p>11. How internally prepared were your company and employees to tackle Covid? How fast have your staff adapted to the new situation and how they realized the situation? Please bring some examples.</p> <p>Sustainability</p> <p>12. Do you see or experience any change with regard to addressing sustainability aspects (environmental and social) when you look back to your pre-corona situation? Please explain a bit more through examples.</p> <p>13. How do you describe the impacts of Covid-19 in long term when it comes to changes that is happening to the structure of Arctic tourism industry and your business (temporary with returns to normal, or broader and long-term leading to a new normal)? I would like to know your prediction.</p> <p>Next new normal</p> <p>14. How do you imagine and describe the "next normal" in terms of recovery from Covid? Are you planning to return to what you have been prior the crisis, or a new efficient version of your company? Please explain it more.</p> <p>15. How long it would take to reach the new normal situation, what do you think?</p>

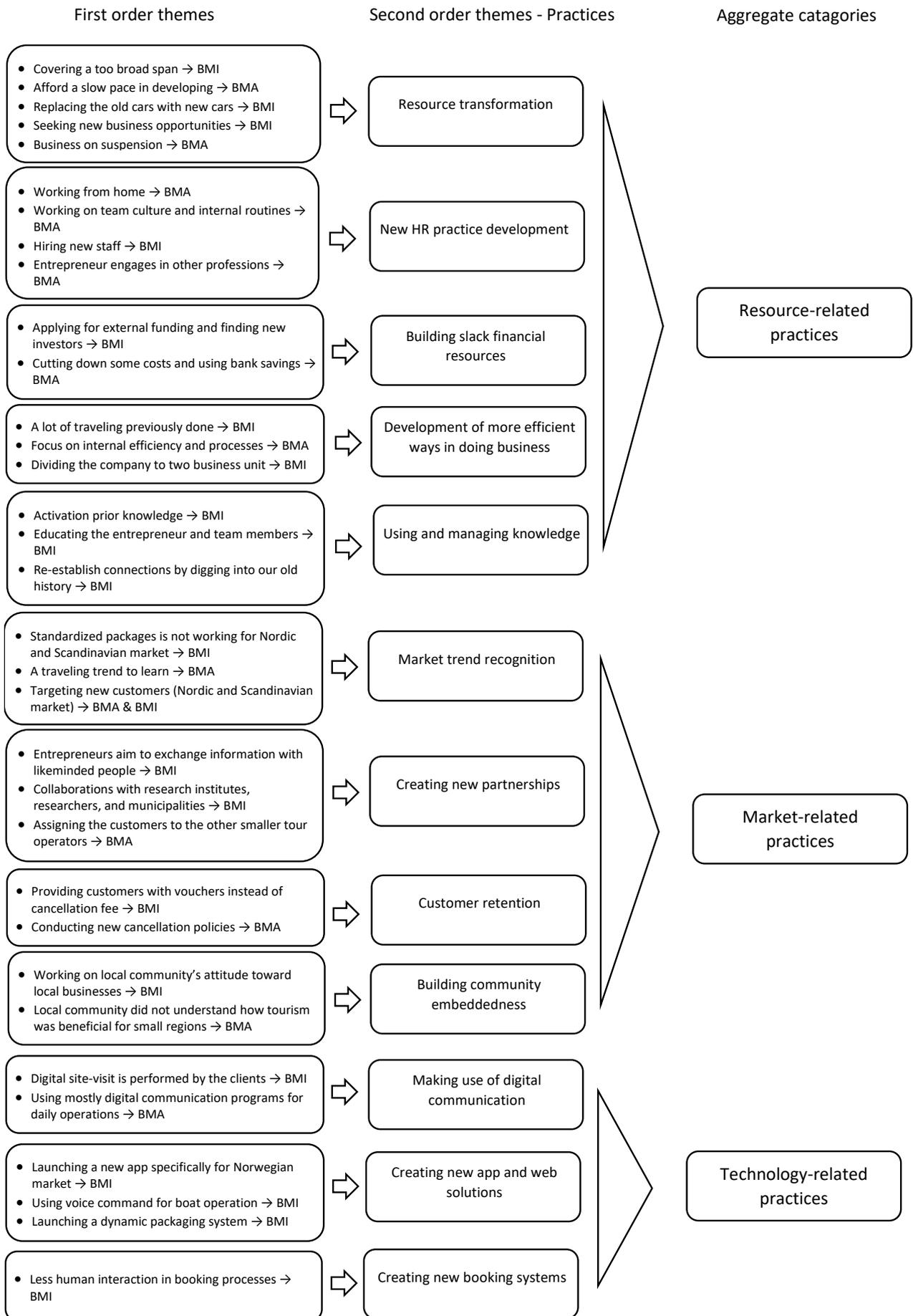
5P and its description	Qs
4.Projects	<p>Government</p> <p>16. Can you name some of the government policies when it comes to providing support for you (it can be any kind of support)?</p> <p>17. Based on such interventions by the government, how do you consider the current effectiveness of such interventions, their fairness and equal distribution among tourism stakeholders and actors?</p> <p>New routines and new products</p> <p>18. Can you name some of your actions and routines that you have tried for the first time during and due to corona, and then you have found them more efficient or practical to replace with previous routines? Please give some examples if it happened to you.</p> <p>19. What changes have you made in terms of your offers and products to make them suitable and attractive for Nordic customers and the current guests that are allowed to travel to Norway? Please tell me anything that is related to your products currently.</p> <p>20. Are you going to keep those new offers, if any? Why, can you please give an example</p> <p>21. Have you had to make any changes within your pricing strategies? Why is that.</p> <p>22. Can you describe how you have been redesigning the tourism experience to ensure tourist safety (smaller groups, outdoors than indoors, social distancing, even introducing new activities, ...)</p>
5.Preparedness	<p>23. I want you explain what do you think about your preparedness to such situation, in general how prepared your company has been to deal with the Covid crisis?</p> <p>24. What is your own assessment regarding your resources such as financial, human, skill, and knowledge when it comes to being prepared to face such crisis?</p> <p>25. If you want to name some of the success factors and the lessons you, your employees, and your company learned from crisis during the crisis, what would you mention?</p> <p>I would like to thank you that you have shared your valuable experience with me, that was a great honor to talk to you, although I would prefer a face-to-face physical meeting; is there anything else you would like to add, suggestions, comments, or anything else, I would be more than happy to listen to you.</p>

Appendix 2: Data Structure (Articles 2 & 3)

Article 2: Data Structure (*: Sustainable orientation (SO), Extended Value Creation (EVC), Systematic Thinking (ST), Stakeholder Integration (SI))



Article 3: Data Structure



Appendix 3: Approvals from NSD (Articles 2 & 3)

Article 2



Samira Sahebalzamani

Vår dato: 26.04.2018

Vår ref: 60389 / 3 / LT

Deres dato:

Deres ref:

Forenklet vurdering fra NSD Personvernombudet for forskning

Vi viser til melding om behandling av personopplysninger, mottatt 18.04.2018.

Meldingen gjelder prosjektet:

<i>60389</i>	<i>Sustainability and business models in nature-based tourism</i>
<i>Behandlingsansvarlig</i>	<i>UiT Norges arktiske universitet, ved institusjonens øverste leder</i>
<i>Daglig ansvarlig</i>	<i>Samira Sahebalzamani</i>

Vurdering

Etter gjennomgang av opplysningene i meldeskjemaet med vedlegg, vurderer vi at prosjektet er omfattet av personopplysningsloven § 31. Personopplysningene som blir samlet inn er ikke sensitive, prosjektet er samtykkebasert og har lav personvernulempe. Prosjektet har derfor fått en forenklet vurdering. Du kan gå i gang med prosjektet. Du har selvstendig ansvar for å følge vilkårene under og sette deg inn i veiledningen i dette brevet.

Vilkår for vår vurdering

Vår anbefaling forutsetter at du gjennomfører prosjektet i tråd med:

- opplysningene gitt i meldeskjemaet
- krav til informert samtykke
- at du ikke innhenter [sensitive opplysninger](#)
- veiledning i dette brevet
- UiT Norges arktiske universitet sine retningslinjer for datasikkerhet

Veiledning

Krav til informert samtykke

Utvalget skal få skriftlig og/eller muntlig informasjon om prosjektet og samtykke til deltakelse. Informasjon må minst omfatte:

- at UiT Norges arktiske universitet er behandlingsansvarlig institusjon for prosjektet
- daglig ansvarlig (eventuelt student og veileder) sine kontaktopplysninger
- prosjektets formål og hva opplysningene skal brukes til
- hvilke opplysninger som skal innhentes og hvordan opplysningene innhentes

Dokumentet er elektronisk produsert og godkjent ved NSDs rutiner for elektronisk godkjenning.

- når prosjektet skal avsluttes og når personopplysningene skal anonymiseres/slettes
- På nettsidene våre finner du mer informasjon og en veiledende mal for [informasjonsskriv](#).

Forskningsetiske retningslinjer

Sett deg inn i [forskningsetiske retningslinjer](#).

Meld fra hvis du gjør vesentlige endringer i prosjektet

Dersom prosjektet endrer seg, kan det være nødvendig å sende inn endringsmelding. På våre nettsider finner du svar på hvilke [endringer](#) du må melde, samt endringsskjema.

Opplysninger om prosjektet blir lagt ut på våre nettsider og i Meldingsarkivet

Vi har lagt ut opplysninger om prosjektet på nettsidene våre. Alle våre institusjoner har også tilgang til egne prosjekter i [Meldingsarkivet](#).

Vi tar kontakt om status for behandling av personopplysninger ved prosjektslutt

Ved prosjektslutt 01.07.2020 vil vi ta kontakt for å avklare status for behandlingen av personopplysninger.

Gjelder dette ditt prosjekt?

Dersom du skal bruke databehandler

Dersom du skal bruke databehandler (ekstern transkriberingsassistent/spørreskjemaleverandør) må du inngå en databehandleravtale med vedkommende. For råd om hva databehandleravtalen bør inneholde, se [Datatilsynets veileder](#).

Hvis utvalget har taushetsplikt

Vi minner om at noen grupper (f.eks. opplærings- og helsepersonell/forvaltningsansatte) har [taushetsplikt](#). De kan derfor ikke gi deg identifiserende opplysninger om andre, med mindre de får samtykke fra den det gjelder.

Dersom du forsker på egen arbeidsplass

Vi minner om at når du [forsker på egen arbeidsplass](#) må du være bevisst din dobbeltrolle som både forsker og ansatt. Ved rekruttering er det spesielt viktig at forespørsel rettes på en slik måte at frivilligheten ved deltakelse ivaretas.

Se våre nettsider eller ta kontakt med oss dersom du har spørsmål. Vi ønsker lykke til med prosjektet!

Vennlig hilsen

Marianne Høgetveit
Myhren Lis Tenol

Kontaktperson: Lis Tenold tlf: 55 58 33 77 / lis.tenold@nsd.no

Article 3

NSD's assessment

Project title

Sustainability and business models in nature-based tourism

Reference number

173042

Registered

06.08.2020 av Samira Sahebalzamani - samira.sahebalzamani@uit.no

Data controller (institution responsible for the project)

UIT – Norges Arktiske Universitet /Fakultet for biovitenskap, fiskeri og økonomi /Handelshøgskolen

Project leader (academic employee/supervisor or PhD candidate)

Giovanna Bertella, giovanna.berterlla@uit.no, tlf: 95090834

Type of project

Research Project

Project period

01.07.2020 - 31.12.2021

Status

07.08.2020 - Assessed

Assessment (1)

07.08.2020 - Assessed

Our assessment is that the processing of personal data in this project will comply with data protection legislation, so long as it is carried out in accordance with what is documented in the Notification Form and attachments, dated 07 August 2020, as well as in correspondence with NSD. Everything is in place for the processing to begin.

NOTIFY CHANGES

If you intend to make changes to the processing of personal data in this project, it may be necessary to notify NSD. This is done by updating the information registered in the Notification Form. On our website we explain which changes must be notified. Wait until you receive an answer from us before you carry out the changes.

TYPE OF DATA AND DURATION

The project will be processing general categories of personal data until 31 December 2021.

LEGAL BASIS

The project will gain consent from data subjects to process their personal data. We find that consent will meet the necessary requirements under art. 4 (11) and 7, in that it will be a freely given, specific, informed and unambiguous statement or action, which will be documented and can be withdrawn. The legal basis for processing personal data is therefore consent given by the data subject, cf. the General Data Protection Regulation art. 6.1 a).

PRINCIPLES RELATING TO PROCESSING PERSONAL DATA

NSD finds that the planned processing of personal data will be in accordance with the principles under the General Data Protection Regulation regarding:

- lawfulness, fairness and transparency (art. 5.1 a), in that data subjects will receive sufficient information about the processing and will give their consent
- purpose limitation (art. 5.1 b), in that personal data will be collected for specified, explicit and legitimate purposes, and will not be processed for new, incompatible purposes
- data minimization (art. 5.1 c), in that only personal data which are adequate, relevant and necessary for the purpose of the project will be processed
- storage limitation (art. 5.1 e), in that personal data will not be stored for longer than is necessary to fulfil the project's purpose

THE RIGHTS OF DATA SUBJECTS

Data subjects will have the following rights in this project: transparency (art. 12), information (art. 13), access (art. 15), rectification (art. 16), erasure (art. 17), restriction of processing (art. 18), notification (art. 19), data portability (art. 20). These rights apply so long as the data subject can be identified in the collected data.

NSD finds that the information that will be given to data subjects about the processing of their personal data will meet the legal requirements for form and content, cf. art. 12.1 and art. 13. We remind you that if a data subject contacts you about their rights, the data controller has a duty to reply within a month.

FOLLOW YOUR INSTITUTION'S GUIDELINES

NSD presupposes that the project will meet the requirements of accuracy (art. 5.1 d), integrity and confidentiality (art. 5.1 f) and security (art. 32) when processing personal data.

To ensure that these requirements are met you must follow your institution's internal guidelines and/or consult with your institution (i.e. the institution responsible for the project).

FOLLOW-UP OF THE PROJECT

NSD will follow up the progress of the project at the planned end date in order to determine whether the processing of personal data has been concluded.

Good luck with the project!

Contact person at NSD: Simon Gogl

Data Protection Services for Research: +47 55 58 21 17 (press 1)

Appendix 4: Signed co-author statements (Articles 1 & 3)



Author declaration

Article title: Business Models and Sustainability in Nature Tourism: A Systematic Review of the Literature.

Authors: Samira Sahebalzamani, Giovanna Bertella

Status: Published in *Sustainability* 2018, 10, 3226. [DOI: 10.3390/su10093226](https://doi.org/10.3390/su10093226)

Authors' contributions:

Both authors made significant contributions. Samira Sahebalzamani is the first author of this article and, therefore, had the primary responsibility of all included developmental phases of article. Giovanna Bertella was the second author and contributed with study methods, concept and idea, and draft preparation, and provided critical comments and feedback on the content of manuscript in all developmental phases.

Developmental phase	Samira Sahebalzamani	Giovanna Bertella
Concept and idea	×	×
Study design and methods	×	×
Data collection	×	
Analysis and interpretation	×	
Manuscript preparation	×	×
Critical revision of the intellectual content	×	×

With my signature I consent that the above listed articles where I am a co-author can be a part of the PhD thesis of the PhD candidate.

Signature

Samira Sahebalzamani

Giovanna Bertella



Author declaration

Article title: A dynamic capabilities approach to business model innovation in times of crisis.

Authors: Samira Sahebalzamani, Eva Jenny B. Jørgensen, Giovanna Bertella, Ety Ragnhild Nilsen

Status: Under review in *Tourism Planning & Development*

Authors' contributions:

Samira Sahebalzamani is the first author of this article and, had the primary responsibility of all included developmental phases of article. Eva Jenny B. Jørgensen was the second author and contributed with draft preparation and provided critical comments and feedback on the content of manuscript. Giovanna Bertella was the third author and contributed with concept and idea as well as manuscript preparation and critical comments and feedback. Ety Ragnhild Nilsen is the fourth author and contributed with critical comments and feedback on the manuscript and its preparation.

Developmental phase	Samira Sahebalzamani	Eva Jenny B. Jørgensen	Giovanna Bertella	Ety Ragnhild Nilsen
Concept and idea	x		x	
Study design and methods	x			
Data collection	x			
Analysis and interpretation	x			
Manuscript preparation	x	x	x	x
Critical revision of the intellectual content	x	x	x	x

With my signature I consent that the above listed articles where I am a co-author can be a part of the PhD thesis of the PhD candidate.

Signature

Samira
Sahebalzamani

Eva Jenny B.
Jørgensen

Giovanna
Bertella

Ety Ragnhild
Nilsen

