Original Scientific Article

The Value of Digital Innovation for Tourism Entrepreneurs in Rural Iceland

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The aim of this paper is to explore digital innovation and entrepreneurial dynamics in rural areas in Iceland. More specifically, the main objective is to describe the current significance digital innovation has for rural tourism entrepreneurs in Iceland. The goal of this study is hence to investigate if and how digital innovation becomes meaningful for rural tourism entrepreneurs in Iceland. Apart from answering the question of 'what is going on on the ground,' the aim is to describe the level of involvement of rural businesses and entrepreneurs in innovation, digital application and technology. Despite the global political discussion about smart tourism and the necessity of digital innovation in the tourism industry, the study revealed that innovation and digitalisation are not necessarily interrelated in the understanding of the rural Icelandic tourism entrepreneurs. The research is an exploratory study and is based on qualitative methodology. Information has been gathered through 34 semi-structured interviews with tourism entrepreneurs and members of their support system in rural Iceland. The research provides knowledge about the status and the value of digital innovation for rural tourism entrepreneurs in Iceland. The study furthermore contributes to gaining understanding about the missing link between policy and practice and thus adds both practical and scientific value to the body of literature.

Keywords: lifestyle entrepreneurship, Iceland, smart tourism, digital innovation, rural entrepreneurship

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Introduction

This article explores the dynamics of digital innovation among rural tourism entrepreneurs based on a case study in Iceland. We are particularly interested in how rural tourism entrepreneurs understand and work with digital innovation and perceive its value, and their experiences of support mechanisms intended to boost innovation. Applied digitalisation is currently a highly discussed topic in policy and business in Icelandic and international contexts (Hjalager, 2014; Stjórnarráð Íslands, 2018; Williams et al., 2020; Zavratnik et al., 2018; Falter et al., 2022). In the tourism industry, digitalisation typically manifests as 'smart tourism.' However, despite an open-mindedness towards digitalisation, tourism practitioners frequently remain sceptical about adopting smart approaches in practice (Liburd et al., 2017). Tourism's economic role has rapidly increased globally over the past cou-

ple of decades,[1] and innovation and entrepreneurship have received increased attention in tourism research. Moreover, the COVID-19 pandemic has highlighted the need for innovation in the tourism industry (Tiwari et al., 2021). In light of this, it is concerning that the literature on rural innovation reveals a gap between rural and urban areas concerning the application of (digital) innovation (Mayer et al., 2016). In Iceland, most tourism businesses are small or micro-sized (SMIES), many of which can be categorised as lifestyle businesses. Such businesses are not limited to rural areas, potentially affecting innovation in the sector. Lifestyle entrepreneurs have been criticised for showing restraint towards technological progress and a lack of interest in profit maximisation (Ioannides & Petersen 2003; Peters et al., 2009).

Our objective is to explore the value of digital innovation for rural tourism entrepreneurs in Iceland and identify how they understand and apply innovation in practice. We focus on the value of innovation from the perspectives of entrepreneurs with different operations and business goals and the challenges they face when engaging in innovation. This paper begins with a brief overview of innovation research in tourism and subsequently explores how tourism operators perceive digitalisation in the tourism industry. This study demonstrates that smart tourism's value differs significantly within the Icelandic tourism industry. The findings indicate black-and-white thinking regarding digital applications in tourism. Business-oriented entrepreneurs are likely to perceive digital applications as valuable, while those more aligned with their business' lifestyle values tend to reject them due to concerns about 'robotising' their interactions with tourists. This paper identifies a communication gap between support systems and the tourism industry, which hinders innovation in rural tourism. We conclude this paper by making recommendations for further research.

Literature Review

Innovation in the Context of Tourism

Although innovation is frequently discussed in current tourism entrepreneur literature (Hansen et al., 2019; Jaafar et al., 2015; Romão, 2020; Sørensen & Hjalager, 2020; Tuomi et al., 2020; Williams et al., 2020; Zach et al., 2020), it is often considered 'too fuzzy a concept to be measured and accounted for' (OECD, 2018, p. 1). The classic Schumpeterian approach (Schumpeter, 1999) describes innovation, in the sense of idea and value creation, as the quintessence of entrepreneurial activity. Within this approach, technological change and productivity growth are closely connected (Ruttan, 1959). The OECD defines innovation as more than developing ideas and creating prototypes and inventions (OECD, 2018) and identifies implementation, knowledge, novelty, and value creation (p. 48) as four essential dimensions of innovation. As the OECD observes, global government initiatives have called for innovation to boost economies and strengthen communities. Due to tourism's continued growth and potential economic value, innovation in this sector has become the focus of public administrations globally (Hjalager et al., 2018; Rodriguez et al., 2014). Furthermore, in the case of Iceland, innovation is seen as an essential driver of regional development, not least in the context of tourism. Recent efforts by public authorities to establish support systems for innovative development in tourism have highlighted this political interest (Stjórnarráð Íslands, 2018).

Tourism is not an easily defined sector and is affected by sectors that are not linked to it at first appearance (Hjalager, 2015). For example, EU transnational corporations, such as infrastructure provision, and the principles of consumer protection, are also linked to tourism and shape the sector subliminally. Hence tourism innovation is often a combination or variation of existing innovative services rather than a 'breakthrough innovation' (Zach, 2016, p. 273). Innovation outside the tourism sector affects tourism, and, to some extent, tourism innovation is a response or consequence of external changes (Hjalager, 2015). As in other sectors, tourism innovation is considered essential for responding to fast-changing global competition (Sørensen & Hjalager, 2020). Businesses need strategies fostering innovative behaviour that eventually leads to business improvement to maintain a competitive advantage in the global tourism market

[1] https://www.unwto.org/why-tourism

(Hansen et al., 2019; Ottenbacher, 2007). Perceived service innovation can positively impact customer experience (Teng & Chen, 2021). In this regard, Hjalager (2015) argues that the role of innovation is increasing in successfully operating tourism businesses.

This article focuses on digital innovation in the context of rural tourism entrepreneurship. The changing trend towards increased application of digitalisation in the service industry has started to affect and change dynamics in tourism and hospitality services (Tuomi et al., 2021). The goal is to support the business' efficiency by increasing customer service and cutting costs through automated processes. Examples include automated check-ins, room service and luggage storage or artificial intelligence-supported learning (Tuomi et al., 2020).

Although the COVID-19 pandemic has increased the attraction of the countryside (French, 2022), there are few examples addressing such digital pilot approaches in rural areas. Nevertheless, rural areas are confronted with the consequences of ongoing change and the transition towards a more technology-driven development. Innovation is imperative for rural areas' resilience and ability to adapt to change to counteract rural-urban migration and promote an attractive living and working environment (French, 2022). The successful implementation of rural innovation depends on the actors involved, a network that French (2022) refers to as an 'innovation ecosystem' (p. 4), and political support (Mann & Miller, 2022). According to Mann and Miller (2022), academia's overarching focus on urban innovation creates a false image of rural areas having little innovation potential. However, due to the lack of access to resources, infrastructure and networks compared to urban areas, rural innovation occurs on different levels and is rarely directly comparable to urban innovation (Mann & Miller, 2022).

Hjalager et al. (2018) relate the discussion of rural innovation to tourism, pointing out that it has a certain ambiguity. The typical rural tourist seeks authentic and back-to-basics experiences (Hjalager et al., 2018). However, rural tourism must simultaneously meet global tourism expectations and provide a certain standard of comfort and modernisation to remain attractive to future customers. Such expectations can place rural tourist entrepreneurs in a paradoxical position when deciding whether to become innovatively active.

Innovation Obstacles and Lifestyle Entrepreneurship

Rosalina et al. (2021) differentiate between internal and external challenges to entrepreneurial innovation. Political issues and dependence on government support are examples of external innovation hindrances (Rosalina et al. 2021). Cooperation between the state and private businesses is frequently regarded as fundamental for effective response to competition in the fastgrowing tourism sector (Rodríguez et al., 2014). Innovation policies and support systems aim to reduce entry barriers and effectively implement tourism innovation. However, Rodríguez et al. (2014) criticise public institutions' tendency to implement innovation strategies *for* actors in the tourism industry instead of collaborating *with* them. Top-down approaches without incorporating the private sector have failed to fulfil companies' needs when implementing innovation.

Rural tourism entrepreneurs also face internal challenges that can negatively influence innovation, such as their tendency to be 'late bloomers' when adopting and implementing innovation (Rodríguez et al., 2014). In light of digital innovation's increasing role in tourism (Işık et al., 2019; Hjalager, 2015), this restraint can affect their level of business improvement and market advantage. The COVID-19 pandemic provided an opportunity to respond to the global trend of increasing digitalisation (Sigala, 2021). The hesitant and late adoption of digital innovation in the tourism sector is rooted in further internal innovation hindrances. Possible reasons include lack of time and financing, insufficient knowledge and a fear of risk and change (Rodríguez et al., 2014; Rosalina et al., 2021).

Another common feature of the tourism industry is hesitation to collaborate with other tourism firms due to rivalry and fear of competition (Rodríguez et al., 2014). Tourism companies' reluctance to collaborate and share knowledge at the government and private sector levels impedes innovative development internally and externally (Işık et al., 2019). Zach (2016) emphasises the benefits of collaboration, especially for SMIEs. Compared to larger tourism companies, these

businesses have limited innovation possibilities due to their small size, financial framework and workforce (Zach, 2016). An understanding of innovation is essential for its implementation and enhancing business performance (Martínez-Román et al., 2015).

However, limited knowledge, lack of collaboration and failure to adopt new technologies are said to be typical characteristics of lifestyle entrepreneurship. Entrepreneurship is commonly defined as 'the pursuit of opportunity beyond resources controlled' (Eisenmann, 2013), often concerning the willingness to take risks (Gunnarsdóttir & Jóhannesson, 2016) and the underlying rationale of economic gain and business growth (Peters et al., 2009). Entrepreneurs are considered to have a key role in innovation and the development of technology and smart processes (Williams et al., 2020).

Unlike conventional entrepreneurs, lifestyle entrepreneurs' business goals are not necessarily growth-oriented and are often driven by various motivations (Peters et al., 2009; Jóhannesson, 2012; Ateljevic & Doorne, 2000). According to Hjalager et al. (2018), the rural tourism industry attracts lifestyle entrepreneurs who pursue the idea of turning a hobby into a career instead of profit maximisation (Hjalager et al., 2018; Peters et al., 2009). They have been criticised for 'primarily following a dream, often with no experience, training or expertise in these areas' (Peters et al., 2009, p. 6). Further criticism has been voiced regarding lifestyle entrepreneurs' aversion to applying new technologies and their lack of management skills and interest in collaborating and networking (Peters et al., 2009; Gunnarsdóttir & Jóhannesson, 2016). Conversely, lifestyle entrepreneurs are said to foster the development of innovative (niche) products and their distribution in the wider industry (Ateljevic & Doorne, 2000).

Dias et al. (2022) argue that lifestyle entrepreneurship in the rural context is an essential driver of innovation. They maintain that lifestyle entrepreneurs' embeddedness in communities increases knowledge and network formation on a local scale. The authors also observe that entrepreneurs' attachment to surrounding nature positively affects innovative value creation (Dias et al., 2022).

Digitalisation and Smart Tourism in Rural Areas

The discussion concerning digital innovation and tourism frequently manifests as smart tourism in the current body of tourism innovation literature and is increasingly gaining global government attention (Hjalager et al., 2018; Rodríguez et al., 2014; Zavratnik et al., 2018). The level of digitalisation in the tourism industry has increased due to extensive technological development (Tuomi et al., 2020). In digital innovation, a distinction is frequently made between smart tourism and e-tourism (Kazandzhieva & Santana, 2019). E-tourism focuses on providing digital connections and is typically used in e-marketing and online booking systems. It is the foundation of smart tourism (Gretzel, Sigala et al., 2015). In contrast, smart tourism has a broad scope of involved technologies, is based on ICTs (Jovicic, 2019; Roopchund, 2020) and is described as 'technical, data-driven, system-oriented and service-dominant' (Liburd et al., 2017, p. 4). It is a meaning-enriched and context-driven application of technology (Gretzel, Reino et al., 2015). The link to virtual reality, artificial intelligence (AI) (Del Chiappa & Baggio, 2015) and social media indicates that tourism innovation is user-driven and responds to the needs of 'smart tourists.' These 'travellers 2.0' (Magasic & Gretzel, 2020, p. 5) demonstrate changed tourism behaviour following digitalisation. This new form of traveller is also referred to as a 'digital native,' emphasising the omnipresence of emerging technologies in daily applications (Skaletsky et al., 2017). Practical examples include the application of AI, online streaming, the use of apps and mobile marketing, for example, cloud-based training programmes for the hospitality sector (Roopchund, 2020). Specifically, smart tourism replaces conventional information channels, such as tourist guidebooks, with smartphones and other digital devices (Mieli & Zillinger, 2020).

However, Ren et al. (2018) argue that smart tourism remains an indistinct and weakly defined concept from the perspective of tourism actors (Gretzel, Sigala et al., 2015). Therefore, despite an open-mindedness towards digitalisation, tourism practitioners often remain sceptical about how to adopt smart approaches in practice (Liburd et al., 2017). Ren et al. (2018) stress

that it is important to 'not see smart tourism as driven exclusively by technological developments and data' (p. 135) but as an amalgamation of digital and social attributes. They see smart tourism as a combination of skills and resources that neither focuses solely on technology and big data nor exclusively on social approaches. Zach et al. (2020) point out that the decision to adopt a new strategy, such as smart tourism, 'happens between becoming aware and forming an understanding of the innovation' (p. 3). Hence, the ability to see value in smart tourism requires a basic understanding of what it implies. The lack of concrete ideas about how to apply smart tourism in practice could lead to the digital exclusion of those unwilling or incapable of making use of technological changes underpinning smart tourism. In the near future, tourism companies will likely require more IT and digital application knowledge (OECD, 2022).

Smart development is more challenging in rural than urban areas (Zach et al., 2020). One reason is that rural areas often lag behind regarding the infrastructure necessary to use or develop digital solutions (Mayer et al., 2016). Moreover, rural areas are associated with high transportation costs, low levels of innovation and fewer creative minds (Gibson, 2010). Another reason is the differences in access to digital applications among individuals. Varying levels of digital involvement produce social division, intensifying the so-called digital divide (Gunkel, 2003). The less peoples' knowledge and involvement in technological development, the less attracted they are to the idea of applying digitalisation. Hence, rural areas often face a downward spiral since information is increasingly provided through digital channels. Those who lack access to technology become even more disadvantaged (Rooksby et al., 2002) and wary of technology, as manifested in technophobia, a feeling of anxiety towards digitalisation and technology (Tussyadiah et al., 2020).

Case Study: Digital Innovation In The Icelandic Tourism Industry

Tourism in Iceland, Organisational Structure and Support for Innovation

In past decades, Iceland has become a popular tourist destination. Tourism has become one of Iceland's most significant economic pillars, with 2,013,190 arrivals at the international airport in Keflavík in 2019 (Ferðamálastofa, 2020b). Before the COVID-19 pandemic, tourism's share of foreign exchange earnings was 42% (Ferðamálastofa, 2018) among the highest in OECD countries.[2] The country's landscape and natural attractions are the main incentives for travelling to Iceland. The Ministry of Culture and Business Affairs (Department of Tourism) is in charge of the development and execution of Icelandic tourism policy and of coordinating various tourism collaboration partners, including the Icelandic Tourist Board. Iceland is divided into seven regions, each with its own DMO supported by public authorities.[3] The DMOS are in charge of marketing their regions as tourism destinations, and they collaborate with municipalities and member companies in tourism development. The Tourism Strategy 2021–2030 (Ferðamálastofa, 2021) was developed under the auspices of the Ministry. It demonstrates an ongoing emphasis on tourism as a tool for developing rural areas. In summary, the tourism strategy aims to achieve a 'profitable and competitive tourism industry in harmony with the country and its people' (p. 3). Its focus is on enhancing the visitor experience and the quality of life for locals. Its purpose is to increase sustainability and effectiveness regarding the 'community,' 'economy' and 'environment.' The strategy emphasises responsible tourism by applying technological and innovative approaches (p. 5). Tourism also features in the Icelandic Strategic Regional Development (Stjórnarráð Íslands, 2018, p. 16) plan, which aims to 'boost tourism services in rural areas.' Regarding implementing the measures described in the plan, public authorities in Iceland collaborate with various private initiatives that carry out training programmes for tourism businesses to increase access to innovation and digital development. The tourism sector's organisational structure largely consists of SMIES, often characterised by lifestyle entrepreneurs, with a few large companies. Despite increased digital activity in the Icelandic tourism industry, the level of digital applications is relatively low. Many SMIES lack a con-

[2] https://data.oecd.org/industry/tourism-gdp.htm
[3] https://www.visiticeland.com/the-regions/

crete social media strategy and the motivation to undertake further education in digital marketing (Ferðamálastofa, 2020a).

Methodology

This study is based on qualitative fieldwork undertaken by the first author. In total, 34 tourism entrepreneurs were interviewed, of which 17 were tour or activity operators, nine were accommodation establishment operators, and eight were catering business operators. The interviewees' ages ranged from 30 to 70 years. Most of the businesses were SMIES and family-run. Although most of them were open all year round, their peak operation period was the summer. The number of employees varied between seasons, from no additional employees in winter months to 40 employees in the high season.

A snowball technique was used to select interviewees throughout Iceland from July 2020 until March 2021. Snowball sampling, also called network chain referral (Lawrence Neuman, 2014), refers to the metaphor of a snowball that gains volume when rolled in the snow. The snowball sampling technique begins by approaching one or a few people and increases the number of contacts based on these initial interactions (Lawrence Neuman, 2014). Since Iceland does not have a formal list of rural tourism innovation network members, snowball sampling allowed us to gradually widen our network and approach actors in this informal network. Most of the interviews were conducted along the South Coast (12), followed by East Iceland (7), North Iceland (6), West Iceland (5), the Westfjords (3) and Reykjanes (1). The interviews were recorded, transcribed and analysed using grounded theory (Strauss & Corbin, 1994), and themes were identified through open and axial coding rounds.

Although the entrepreneurs interviewed in this study were all SMIES, their business aims varied significantly. The vast majority were classified as lifestyle entrepreneurs. The rest had more economic and global perspectives on the tourism sector; hence, they could be classified as growth and business-oriented entrepreneurs, whose business goal is economic growth and scalability. The identified key themes were, firstly, how the interviewees understand and apply innovation in their businesses, focusing on innovation during the COVID-19 pandemic, including perceived innovation hindrances. Secondly, the analysis focused on digital innovation, how the interviewees apply it and, notably, how they perceive smart tourism.

Analysis

Definition of Innovation

In tourism, the innovation process is described as complex, resulting in additional difficulties for SMIES (Dias et al., 2022; Zach, 2016). As previously discussed, innovation has become a buzzword in the global tourism sector (Hjalager, 2010). To gain understanding, it is essential to obtain insights into how innovation manifests in practice. We attempted to elicit interviewees' understanding of how they apply innovation by asking them to illustrate or describe innovation. We observed that although many of the entrepreneurs initially associated innovation with 'something new' or 'unique,' most of them perceived it as 'doing existing things in a new way.' Hence, most of the interviewees saw innovation as an improvement or 'twist' on existing products or processes instead of initiating something 'ground-breaking.'

For many of the interviewees, innovation means to actually *do* something and bring the idea-finding process further towards implementation. Identifying oneself with the implemented innovation ('with heart and soul') was a frequently mentioned aspect. Two entrepreneurs argued that innovation occurs 'out of need;' great ideas are more likely to happen under pressure. In six of the cases, the term 'innovation' was unclear and required further explanation or translation into Icelandic.

Innovation in Practice

Despite the interviewees' overall agreement in defining innovation, the above definitions remain theoretical. Contrary to the literature's emphasis on the key role of technology in innovation processes, only three entrepreneurs associated innovation with something digital. When asked what innovation means in practice and how it manifests for them, most of the entrepreneurs referred to their business as a whole rather than identifying specific examples. They often

saw their innovation manifesting as a business idea that was new to the area or executed in a way that had never been tried before. Gastronomy entrepreneurs, in particular, defined their innovation as using natural materials and converting them into products that do not yet exist in that form. Another connection to innovation was made through education, notably 'raising awareness for sustainability in local food' and Icelandic history:

> Cause [sic] we are doing something new on a very old foundation. So we are taking something that wasn't really known. Because the Icelanders that come to us, they are always like, 'Oh, I didn't know you had caves here.' [Tourism Entrepreneur, South Iceland]

Only a few entrepreneurs gave examples of their innovation in practice that matched their previous description of innovation. A restaurant owner in North Iceland described innovation as something 'which was maybe behind, and you take it and put it in a new dress.' In practice, she 'dressed up' traditional rural Icelandic food and served it as original meals in her restaurant. She aimed to reveal old Icelandic traditions and combine them with contemporary tourism requirements.

Innovation During the COVID-19 Pandemic

The field study was conducted from the summer of 2020 until the spring of 2022, when the tourism industry was significantly impacted by the COVID-19 pandemic. In Iceland, tourism decreased by 75.8% compared to the previous year (Ferðamálastofa, 2021). Many tourism companies suffered financial losses despite government support.[4] The most frequent business response was to reduce services to a minimum. All operational businesses shifted their focus to the Icelandic market due to global travel restrictions, implying a redefining of their marketing strategies. Several interviewees stated that although they did not take specific action to cope with the sudden effects of the pandemic, they used the time to rethink their business philosophy. They explained that due to their small business size, the daily workload required all their time, resources and workforce during COVID-free years. Hence, restructuring the business had largely been placed on hold:

> And we started to realise how nice it is to not constantly be stressed. That was a very important experience for us, which eventually led us to starting [sic] to restructure our business model. [Lifestyle entrepreneur; tour operator, North Iceland]

Several of the interviewed tourism entrepreneurs adapted their services so that they could continue to operate their businesses despite social gathering restrictions and reduced numbers of tourists. They reused their business resources in a different context. For example, a tour operator in South Iceland temporarily offered car cleaning services using the equipment they used to clean their tourist trucks:

> It was a brilliant idea because what could we do? I mean, we did not have any travellers. Because we had everything there. The best products and equipment and all of the machines. [Tour operator, South Iceland]

Using existing resources was also a crucial coping strategy adopted by restaurant owners who supplied packed raw materials typically used in their business. Apart from the abovementioned restructuring of (online) marketing strategies, only one entrepreneur mentioned a digital coping strategy. He restructured his restaurant and offered an online takeaway service.

Innovation Obstacles: The Gap Between Policy and Practice

Most of the interviewees stated that they would like to increase their innovation level within their business. Lack of time and financial resources were the most frequently named hindrances, as highlighted in the following quote:

> Maybe when you are in a rural setting, you are fighting a much harder life within your com-

[4] https://www.government.is/government/covid-19

> pany. You are the manager, the marketing manager, the sales manager; you are the chef, you probably have 100 jobs, so this [increasing innovation] is something you always leave for later. [Hotel owner, East Iceland]

This statement reveals that apart from the time aspect, the rural setting further complicates innovation development. In rural areas, tourism is more seasonal, which is a challenge when hiring staff. Seasonal staff turnover forces businesses to allocate resources to teaching and training employees instead of focusing on expansion. Hence, developing innovative ideas is placed on hold to ensure day-to-day business operations. Furthermore, the 'countryside mindset' was a frequently named innovation hindrance. The entrepreneurs differentiated between individuals and local governments hampering innovative actions. Regarding individual actions, one entrepreneur pointed out a particular area's unused tourism potential and criticised the lack of private initiatives for developing it:

> It is so funny because there are a lot of people here that are talking about this kind of stuff: 'Yeah, we need to find something to do and do something.' But nobody is doing that. Maybe it is because everybody thinks people should do it for them [laughs] and not themselves. [Tourism entrepreneur, West Iceland]

Several entrepreneurs highlighted the difficulties rural companies encounter when accessing venture capital. They argued that in remote areas, banks demand a long-term business plan and securities to ensure repayments. Due to the short tourism season, many applicants cannot provide this; thus, they are not granted a loan. However, the current Icelandic Regional Development Plan refers to rural equalisation regarding several measurements (Stjórnarráð Íslands, 2018). According to one interviewee, this development is either too slow or non-existent:

> Rural areas. They are not really on their focus plan. It's very fancy to say, 'we want to strengthen the rural areas.' You get a lot of votes, and people are very positive and blah, blah, blah, but they are not showing it by doing anything. [Lifestyle tourism entrepreneur, East Iceland]

The local grant system was also criticised. According to one interviewee classed as a growth-oriented entrepreneur, non-scalable and non-innovative projects with a low impact on the region's economic development predominantly receive local government support. The following quote emphasises criticism of this lack of understanding of innovation on the part of authorities:

> I think with the governmental programmes, when they are talking about innovation, they are thinking about creating jobs for one. But real innovation is when you have something that really scales. [Growth-oriented tourism entrepreneur, South Iceland]

Further criticism towards the (local) government was voiced, especially by entrepreneurs in the most remote areas, the Westfjords and East Iceland, because they do not feel seen and supported by local and national governments. Two business operators from West Iceland criticised the lack of practical relevance in government educational programmes and funding for SMIES. They considered government support to be too little and irrelevant. They also argued that mentors and lecturers lack the practical experience and insights into the reality of the tourism industry required to teach educational programmes. These entrepreneurs criticised the missing link between policy and practice that hampers successful collaboration benefitting both sides. They argued that tourism businesses and the government work separately with little exchange:

> The system is so broken. The companies and the system, they are not talking together. This is just like there is not an understanding between these two groups, [of] what we are doing. [Tourism Entrepreneur, West Fjords]

Entrepreneurs in the west and east of Iceland predominantly highlighted this perceived disconnection

from policy. However, several other entrepreneurs from these regions had a very positive attitude towards the government, as did entrepreneurs in the north and south. According to one entrepreneur, government support follows the 'principle of demand and supply.' Due to the lower entrepreneurial activity in rural areas compared to the 'innovation centre Reykjavík,' fewer requests are submitted to local governments. Hence the likelihood of obtaining support increases. The fact that companies and individuals are 'more unique and better known' (Entrepreneur, West Iceland) in smaller local communities improves this likelihood.

The Digital and Tourism: Smart Tourism

As demonstrated above, the current body of digital tourism literature and tourism development leans towards fostering digital innovation and smart tourism strategies. In this case study, we observed that the interviewed entrepreneurs held different opinions regarding the value of digitising and automating processes in the tourism sector. Several entrepreneurs associated smart tourism with digital marketing and online booking, an area in which all the interviewees demonstrated high levels of expertise. In contrast, some interviewees did not perceive any usefulness in smart tourism in the sense of automated processes onsite and pointed out that they could not imagine applying it in their own businesses. They associated smart tourism features with urban areas, where travelling is faster and more anonymous. They argued that automated processes such as self-check-ins fit 'the younger generation' and considered themselves digitally 'old-fashioned.' These entrepreneurs feel that personal communication with guests is an essential requirement of Icelandic tourism. Hence, they related automation processes with a loss in personal services and, thus, a decline in the offered experience:

> But I find it quite sad; humans are lacking so much interaction because of technical advances. Covid has also highlighted the loneliness of being in a virtual world. [Lifestyle gastronomy entrepreneur, South Iceland]

These entrepreneurs also fear 'missing touch with the real world.' Two entrepreneurs voiced concerns that smart applications could attract mass tourism and careless travellers. An entrepreneur from South Iceland argued that her sole-trader business does not fulfil the requirements for digital applications, and extra demand through online systems would exceed her capacities.

In contrast, the entrepreneurs classed as growth-oriented saw great value in smart tourism and argued that digital features improve service and *save* capacities. This group is divided into those who find smart tourism development meaningful in *general* and those who find it relevant only in *specific* application areas. Instead of fearing a loss of personal service through digital applications, several entrepreneurs see an opportunity to use smart tourism to improve it. They anticipate that outsourcing time-consuming processes will allow them to focus on communicating with tourists, which positively contributes to improving their service and, hence, their product:

> I don't want you to stand behind the desk and sell tickets; I want you to go on the outside. I want you to greet the [guests]. And then I want you to lead them to the ticket machine. Eventually, we will only have automatic ticket machines and will only have greeters. [Growth-oriented entrepreneur, South Iceland]

These entrepreneurs see smart tourism as 'the future' of Icelandic and global tourism and expect 'easier business.' Several of them criticised the slow digital development in the Icelandic tourism sector and anxiously referred to the lack of digital awareness among their colleagues. They criticised the 'dinosaur' mindset of those unwilling to apply digital innovation and pointed out the lack of openness towards new trends in Icelandic tourism, such as innovative paying systems. According to one growth-oriented interviewee, tourism innovation in Iceland is predominantly driven by large companies due to a lack of understanding in the SMIES community:

> They don't understand the reason, and if I want to help them to do digital innovation, they want

> me to do Facebook ads. That's their innovation. [Growth-oriented entrepreneur, South Iceland]

Despite an expressed openness towards smart tourism, most of the entrepreneurs do not consider smart tourism features a fit for their business. A hotel owner in East Iceland, who is very open towards digitalisation per se, observed that guests visiting remote rural Iceland are looking for personal contact:

> I like that for natural landmarks, it is good to have these gates where you can just pay and come in. Or for the toilets and stuff like that. But my feeling is you are not coming to the end of the world where we live, like people who live in cities. This is surreal, that peaceful town. I think that would be strange. [East Iceland]

Most of those entrepreneurs who do not consider digital innovation a fit for their businesses see the future in a combination of traditional and digital measures. Whether they find digitalisation useful, all the interviewees share the common goal of increasing personal service and experience. Thus they see aspects of smart tourism as a method of simplifying processes, saving staff or providing touchless payment systems through technological support without 'robotising' their business. For example, one hotel owner in East Iceland supplies her rooms with iPads providing an integrated booking system for the hotel's and region's services. At the same time, she employs additional staff at the service desk exclusively for personal customer contact:

> Of course, it costs something, but I really think it is worth it because this is one way of doing things more simple [sic] for my staff and also doing something good for the environment. But we have to be careful because I don't want to have a place where I don't see the people. The technology, it's both positive and negative. [Hotel owner, East Iceland]

Discussion and Conclusion

Lack of time and financial resources are the main obstacles hindering small Icelandic tourism entrepreneurs from educating themselves about digital marketing strategies (Ferðamálastofa, 2020a). Our above observations support this finding: SMIES are too occupied with their daily work to study digital applications and decipher innovative projects. The enforced break during the COVID-19 pandemic gave them room to rethink their strategies and business models and develop new approaches. This lack of time raises the question of whether lifestyle entrepreneurs can increase their level of innovation on a larger scale. The interviewees also observed that financial restrictions indicate a gap between tourism reality and policy. Large funding applications require significant time and labour commitments. It is evident that the interviewees, who are already running businesses, cannot meet grant requirements requiring the time-consuming instigation of ground-breaking projects.

For the interviewees, applied innovation manifests in various novelties or variations in their businesses. However, these innovations tend to serve their specific business and demonstrate little capacity for growth. Due to increased competition in the Icelandic tourism industry in previous years, innovation has become imperative for survival in the market, raising the question of how tourism companies will cope in the future. If they strive for non-scalable, local innovation while global development aims for high-scalable, international innovation, further research is needed to investigate what this implies in practice. If lifestyle entrepreneurship reaches its limits in a future dominated by digitalisation and automation, creative destruction could result as entrepreneurs who do not jump on the bandwagon disappear from the market.

The financial aspect of the innovation dynamic seems to reproduce the rural divide. Entrepreneurs in areas with short seasons and a modest flow of tourists highlighted the difficult conditions for obtaining loans. Banks are more likely to support tourism projects close to the capital area because the steady flow of tourists guarantees the ability to make repayments. The lack of support in rural areas also hinders tourism innovation. Again, tourism entrepreneurs face a vicious circle, and the dynamics of innovation come to a halt: the lack of financial resources supporting tourism innovation leads to a lack of innovative

projects. Hence a lack of investment results in a lack of innovation.

At this point, rural innovation is facing a double-edged sword. On the one hand, policy aims to foster rural tourism by boosting innovation (Stjórnarráð Íslands, 2018). The considerable political interest in tourism is largely due to its contribution to the GDP. On the other hand, several entrepreneurs state that the grants are difficult to obtain and too small to implement innovative and creative change. Further criticism of the mismatch between education provision and tourism business needs indicates another gap in demand and supply between tourism entrepreneurs and the support system. As previously discussed (Rodríguez et al., 2014), including tourism actors in policy formulation and implementation is essential for achieving desirable outcomes. The interviewed SMIES perceived a lack of broad involvement in the tourism policy framework. Tourism plans, strategies and education appear to be developed *for* tourism entrepreneurs rather than *with* them using a top-down approach in collaboration with a few strong, large companies.

Furthermore, this study demonstrates that the rural tourism sector does not consist of a uniform group but various businesses with different goals. We see the need for more straight-forward and open conversation between tourism businesses and policymakers to overcome this mismatch and establish more customised bottom-up approaches. Therefore, acknowledgement from the tourism support system that the Icelandic tourism sector is not uniform is an essential precondition. The sector consists of various forms of entrepreneurs with different business goals, ranging from growth-oriented to lifestyle entrepreneurship, and while most appear to be interested in innovation, its meaning and value for their businesses differ. Hence, a vibrant innovation ecosystem in rural Iceland requires a support system that considers these companies' individual characteristics, strengths and weaknesses.

Uncertainty regarding the implications of smart tourism was a recurring theme throughout the research, influencing its perceived value for the interviewees. Since most of them were tour operators, caterers or accommodation owners, they could not completely digitise their core services. We often received the impression that smart tourism and automation were directly associated with the image of heavy industry. Most of the interviewees appeared to think in black-and-white terms, either for or against smart tourism. Since smart tourism seemed to symbolise industrialised robotic technology, some automatically associated it with decreased personal communication with customers. Only a minority, predominantly growth-oriented entrepreneurs, saw smart tourism features as an opportunity to minimise necessary daily tasks and focus on personal interactions with tourists. They largely referred to smart tourism features as staff- and time-saving tasks such as automated ticket sales or audio guides. Despite scepticism and restraint towards automated processes, digital marketing tools are crucial for most of the interviewees. Since tourism operators are highly proficient in digital marketing, although most are somewhat reserved concerning smart tourism strategies, we would categorise the scale of digital applications in Icelandic tourism as e-tourism (Kazandzhieva & Santana, 2019). While e-tourism uses digital channels to provide information, smart tourism implies experiencing co-creation through technology. Only two of the interviewees, whose businesses are based on co-creation and digital interaction with tourists, matched the classification of smart tourism providers. For the rest, the value of digital innovation lies more in advertising and information provision. As soon as the guests arrive, they focus on personal interactions.

Regardless of the interviewees' business intentions, they all pursued the common goal of increasing personal customer service and positive experiences for tourists. As discussed in the literature review, the global digitalisation trend will lead to a changed and more digitised tourism demand in the near future. As smart applications gradually replace tourism leaflets, the future of tourism will require a higher level of automation and digital possibilities. Since many of the interviewees do not see a match between digitalisation and remote Icelandic nature, we wonder how Icelandic tourism businesses will react when tourists' expectations change in the near future. Global tourism devel-

opment is bipolar, with an enhanced requirement for convenient travel and a high level of new technologies, on the one hand, and a growing demand for authentic rural and back-to-basics experiences, on the other. Further research is needed to investigate the extent of these future changes and their potential impact on the rural tourism industry in Iceland and elsewhere.

As previously stated, tourism entrepreneurs who strongly favoured smart tourism development voiced heavy criticism, and in some cases even annoyance, because they perceived digital development in the Icelandic tourism industry as too slow. They especially criticised their industry peers' indignation at increasing their digital applications. Like Rooksby et al. (2002), they observed a link between low levels of digital competence and understanding and the decreasing likelihood of becoming digitally active and blamed individuals' 'fear of the unknown.' We found these arguments very similar to the common criticism of lifestyle entrepreneurship: hindering economic growth.

Nevertheless, lifestyle entrepreneurs can also significantly impact rural innovation development. Notwithstanding the wariness towards digital applications in their businesses, we did not receive the impression that the interviewees were against applying digital features. Several entrepreneurs who felt less technology-aware often outsourced digital marketing, leaving analytical work to experts. We identified significant conformity between their operational management, location and guests' (largely nature lovers seeking outdoor activities and peace) requirements. The main concern of tourism operators who did not see digital applications as meaningful was their fear of losing what they described as the authentic tourist experience. Concerns that smart tourists could miss being fully present in the moment have also been addressed in academia in the context of smart tourism development (Gretzel, Reino et al., 2015).

Listening and responding to customer feedback can provide a successful resource for increasing business success (Hjalager, 2014). The importance of understanding customers became evident when exploring the first research question about how innovation is understood and applied. In contrast to the above-stated emphasis on digital innovation in policy documents and literature, technology did not have a significant bearing on the meaning of 'being innovative' for the interviewees. For lifestyle entrepreneurs, in particular, innovation meant adding new value in terms of new for the area, the situation or the people involved. Hence, despite remaining restrained about applying digital innovation in their businesses, the interviewed lifestyle entrepreneurs indicated significant interest in and awareness of tourism innovation.

The aim of this paper was to explore the value of digital innovation for rural tourism entrepreneurs in Iceland and identify how they understand and apply innovation in practice. The study offers some important insights into the role of digital innovation in rural tourism. It demonstrates how a lack of clear communication between tourism actors and authorities can hinder innovative development of the industry. A limitation of this study is that the sample group is relatively small. To investigate the dynamics of digital innovation in Icelandic tourism on a bigger scale, further research is needed. As previously mentioned, the tourism industry in Iceland is not uniform and consists of a variety of different actors. It would be interesting to gather a bigger sample group of each type and hence get deeper insights into the dynamics of each type.

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