

Organisational learning and sustainable tourism: the enabling role of digital transformation

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Abstract

Purpose – Organisational learning drives tourism organisations towards more sustainable tourism. Digital transformation also provides opportunities for sustainable tourism development. This study aims to combine these perspectives and explore how digital transformation enables organisational learning to contribute to sustainable tourism, following organisational learning theory (OLT).

Design/methodology/approach – Based on a critical realist paradigm, this study focuses on developing an in-depth understanding of organisational learning in tourism organisations. Thirty qualitative interviews with tourism organisations participating in an executive development programme (EDP) show how tourism organisations create, retain and transfer knowledge.

Findings – This study demonstrates that the EDP initiates knowledge creation through content transmission and exchange, triggers knowledge retention through utilisation of digital technologies and reinforces digitalisation through data value creation. Furthermore, this study enables knowledge transformation as implementation, which contributes to the three pillars of sustainable tourism and facilitates the development of networks encouraging sustainable tourism.

Originality/value – This study identifies approaches that enable economic, social and environmentally sustainable tourism development by facilitating collaborations via digital transformation, digital technologies that guide guest streams, online mobility offers and online environmental awareness campaigns that reduce environmental impacts. Thus, this study strengthens OLT and has implications for organisational learning and tourism policymakers.

Keywords Learning organisation, Learning process, Executive education, Digitalisation, Organisational learning theory, Human resource development programmes

Paper type Research paper

1. Introduction

Organisational learning has attracted considerable attention (Bayraktaroglu and Kutanis, 2003) as a means for tourism businesses to cope with changing and challenging economic and political environments (Bhaskara and Filimonau, 2021). Following Schianetz *et al.* (2007), organisational learning represents a pre-requisite for advancing tourism businesses and destinations towards more sustainable tourism. In particular, learning is required at the organisational and destination levels to promote sustainable tourism issues beyond the responsibilities and possibilities of private organisations and local authorities (Schianetz *et al.*, 2007). According to Marx *et al.* (2021), the tourism industry suffers from slow digital transformation processes (Lam and Law, 2019; Muniz *et al.*, 2021), suggesting that organisational learning is essential for the development of digital competencies (Calvini *et al.*, 2009). Digital transformation is based on the combination of digital technologies and competencies processed to develop competitive advantages and innovations (Ferreira *et al.*, 2019; Vial, 2019). Many national governments offer funding programmes that encourage organisations to implement digital technologies (Lemmettyinen, 2010). One major

initiative is driven by education: governments develop digital knowledge in organisations where transformation is somewhat slow, such as in tourism, via executive development programmes (EDPs) (Morellato, 2014). These human resource development programmes serve as transmitters of digital competencies (Conger and Xin, 2000) to respond to digitalisation challenges (Vial, 2019) and industry requirements (Adeyinka-Ojo *et al.*, 2020). Digital transformation represents a strategic challenge that can serve as a learning vehicle in executive education (Vries *et al.*, 2020). Nevertheless, the effectiveness of such programmes remains unclear.

According to organisational learning theory (OLT), executive education can serve as an experience that determines knowledge creation, retention and transfer (Argote, 2011). Accordingly, organisational learning attempts to change behaviours and cognitions (Brix, 2017). Though some studies claim that organisational learning can lead to implementation of digital competencies in organisations (Vial, 2019; Marx *et al.*, 2021; Calvini *et al.*, 2009) and foster sustainable tourism (Schianetz *et al.*, 2007; Tremblay, 2000; Halme, 2001), the manner in which it occurs remains unexplored.

So far, only a few studies have established a link between digital transformation and sustainable tourism, arguing either that digitalisation and sustainability cannot be developed harmoniously (O'Neill *et al.*, 2018) or that digital technologies can aid sustainable development (Bican and Brem, 2020; van Gils and Weigand, 2020). However, there are still no integrative studies exploring how digital transformation can contribute to sustainable tourism.

This study follows Schianetz *et al.* (2007) to explore the impact of organisational learning on the advancement of sustainable tourism; it follows Streimikiene *et al.* (2021) to assess digital developments in the study and advancement of sustainable tourism. Thus, we intend to study the mechanisms of organisational learning contributing to sustainable tourism, facilitation of digital transformation by organisational learning and the resulting enhancement of sustainable tourism concepts and actions. This study proposes that digital transformation in organisations can contribute to sustainable tourism development (Bican and Brem, 2020; van Gils and Weigand, 2020), initiated by organisational learning. To investigate the phenomenon of organisational learning and its contribution to sustainable tourism (Schianetz *et al.*, 2007; Tremblay, 2000; Halme, 2001), we aim to answer the following research question:

RQ. How does organisational learning contribute to improvements in sustainable tourism via digital transformation?

This study improves the understanding of how the organisational learning process in tourism organisations contributes to more sustainable tourism and explores the opportunities provided by digital transformation.

2. Organisational learning theory

2.1 Knowledge creation initiated by executive education

OLT describes the behaviour of organisations in terms of reducing uncertainty (Sullivan and Nonaka, 1986) by focusing on the development of knowledge (Casey, 2005). The individual learning of organisational members forms the foundation of organisational learning (Alerasoul *et al.*, 2021); it is based on the premise that as an organisation develops over time, it gains experience. Experience provides the foundation for creating knowledge, which shapes organisational competencies (Drejer, 2000). Thus, the promoting learning in a systematic, synergistic and conscious manner, focusing on the entire organisation, is prioritised (Bayraktaroglu and Kutanis, 2003).

Knowledge creation represents the change in an organisation's knowledge in response to an experience (Fiol and Lyles, 1985) and thus, "occurs when a unit generates knowledge that is new to it" (Argote and Miron-Spektor, 2011, p. 1128). This definition builds on the argument that experiences represent the basis of knowledge creation. Following experiential learning theory, experience transformation enables knowledge creation (Kolb, 2015). According to

Argote and Miron-Spektor (2011), organisational experiences are determined by an organisation's environment, including influences from customers, competitors, institutions and regulators. Thus, organisational experience and knowledge creation are determined by external influences (Levitt and March, 1988). Studies show that executive education in the form of EDPs can potentially facilitate strategic transitions for aligning organisations in new directions (Conger and Xin, 2000; Kets de Vries and Korotov, 2007; Tushman *et al.*, 2007; Vries *et al.*, 2020) and thus, initiate knowledge creation. Linder and Sperber (2019) argue that internal knowledge stocks also determine organisational learning; these also involve digitalisation with pre-existing digital competencies (Calvini *et al.*, 2009).

Kets de Vries and Korotov (2007) underline that experiencing and experimenting are core competencies of executives that can subsequently be used for experiential learning (Kolb, 2015). In particular, higher education institutions must cultivate digital competencies (Morellato, 2014), building on their wealth of knowledge at the institutional, departmental and individual levels (Elezi and Bamber, 2022). However, executive education often struggles to meet the needs of participants with appropriate content (Vries *et al.*, 2020), building on the concern that universities are uncoupled from practice (Tushman *et al.*, 2007). Therefore, programmes should be designed with a focus on the strategic challenges faced by participants (Vries *et al.*, 2020) to serve as an experience that initiates organisational learning (Argote, 2011). Elezi and Bamber (2022) further argue that collaborations through partnerships with higher education institutions are necessary to achieve knowledge synergy effects. Moreover, EDPs need to concentrate on transformation, which is a change in the participant's behaviour to become more effective in business practices and transcends mere creation of knowledge (Kets de Vries and Korotov, 2007).

2.2 Knowledge retention as digital transformation

Following OLT, the created knowledge should be retained to develop persistence over time (Argote, 2011; Brix, 2017). Knowledge retention encompasses processes, routines and behaviours (Walsh and Ungson, 1991), focusing on developing digital competencies in the context of digitalisation (Calvini *et al.*, 2009). Alford and Jones (2020) argue that to meet digitalisation challenges, businesses require digital skills that must be learned, acquired, shared and transferred within the organisation.

Digital competency is defined as the ability to explore new technology and select, analyse and critically evaluate information and data (Calvini *et al.*, 2009). Following Vial (2019, p. 118), digital transformation is "a process where digital technologies create disruptions triggering strategic responses from organisations that seek to alter their value creation paths while managing the structural changes and organisational barriers that affect the positive and negative outcomes of this process." Thus, digital transformation is a process wherein digital technologies combined with digital competencies can create opportunities to support radical business model innovation and attain competitive advantage (Ferreira *et al.*, 2019; Vial, 2019). Digital transformation further involves the adoption of digital technologies; these technologies are primarily non-specific and defined as "combinations of information, communication, computing, and connectivity technologies, that are fundamentally transforming business capabilities" (Bharadwaj *et al.*, 2013, p. 471). As such, digital technologies potentially transform strategies, business processes, firm capabilities, products, services and customer relations (Bharadwaj *et al.*, 2013; Vial, 2019). As ElMassah and Mohieldin (2020) reveal, digital transformation can stimulate a change in process to achieve sustainability goals.

2.3 Knowledge transformation

Following the organisational learning process, the created and retained knowledge should then be transferred between and within units (Argote, 2011; Brix, 2017). Efficient knowledge management builds on transforming knowledge to maximise knowledge-related

effectiveness in an organisation (Wiig, 1997). An organisational knowledge management policy determines the amount of knowledge available within the organisation and its knowledge transformation (Cooper, 2002). Organisational learning attempts to change behaviours and cognitions; in the given context, this relates to potential advancement of sustainable tourism (Halme, 2001; Schianetz *et al.*, 2007; Tremblay, 2000). Sustainable tourism is ubiquitously represented as a three-pillar concept comprising social, economic, and environmental sustainability (Mihalic, 2016), with the overarching priority of achieving a balance between positive and negative tourism effects (Lordkipanidze *et al.*, 2005). Thus, sustainable tourism is defined as “tourism that takes full account of its current and future economic, social, and environmental impacts, addressing the needs of visitors, the industry, the environment, and host communities” [United Nations World Tourism Organisation (UNWTO), 2004, p. 12]. Economic sustainability focuses on employment and business viability, whereas social sustainability refers to the quality of life of community residents, congestion and overcrowding. Environmental sustainability relates to water and waste management and energy conservation (Agyeiwaah *et al.*, 2017).

Prior research has demonstrated that education on sustainable development impacts the achievement of Sustainable Development Goals (Kopnina, 2020; Lambini *et al.*, 2021). Furthermore, programmes that develop digital knowledge in tourism and hospitality firms (Morellato, 2014) support sustainable tourism development. The tourism industry requires a digital transformation process to satisfy changing demands (Lam and Law, 2019) and exploit sustainable development agendas (van Gils and Weigand, 2020). ElMassah and Mohieldin (2020) demonstrate that digital transformation can boost sustainable development strategies. In line with OLT, Schianetz *et al.* (2007) suggest that tourism organisations that are adaptive to changing circumstances and capable of learning how to enhance sustainable development, contribute to the achievement of sustainable tourism. Following that, the learning tourism destination concept was developed based on the assumption that the implementation of collective learning processes promotes stakeholders' communication and organisational learning to advance sustainable tourism (Schianetz *et al.*, 2007).

Notably, OLT suggests that knowledge transfer occurs because of social cohesion in informal networks (Reagans and McEvily, 2003). Tourism firms often rely on consultants or destination management organisations (DMOs) to acquire new knowledge and skills (Ruhanen *et al.*, 2021; Xiao *et al.*, 2017). These network organisations guide and push digital transformation (Marx, 2019). Similarly, Halme (2001) and Schianetz *et al.* (2007) suggest that networks in tourism contribute to sustainable tourism development. DMOs serve as network managers at destinations (Volgger and Pechlaner, 2014), whereas state tourism organisations (STOs) are responsible for tourism management in a province, state or territory (UNWTO, 2004), improving destinations' competitiveness through digitalisation initiatives (Pike and Mason, 2011). In addition, consultants for small- and medium-sized enterprises (SMEs) are part of such networks and potentially transfer knowledge, skills and expertise to the tourism industry (Xiao *et al.*, 2017). Haid *et al.* (2021) demonstrate that communication between stakeholders is a key driver for advancing sustainability at the destination level. In addition, Sharif *et al.* (2020) and Sharif *et al.* (2021) highlight knowledge leakages restraining knowledge transfer, with organisations being particularly concerned about sharing private and core knowledge with network partners.

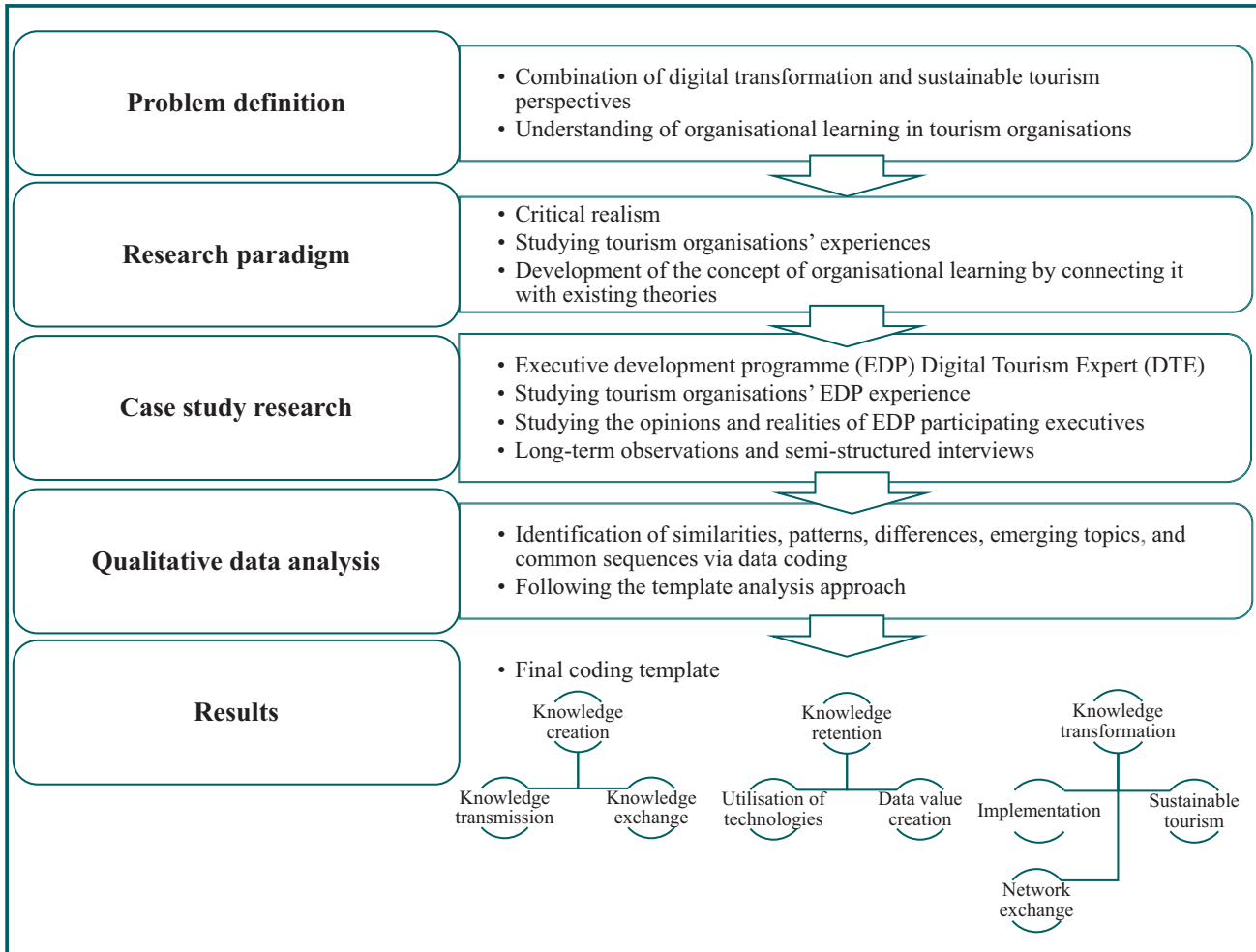
In summary, organisational learning initiated through executive education may advance sustainable tourism; digital transformation further enables this development. This study explores the role and relevance of organisational learning for sustainable tourism, following the assumptions of OLT.

3. Research design

3.1 Study background

We apply a critical realist paradigm to study the opinions and realities of EDP-participating executives of tourism organisations (Easton, 2010) (see Figure 1 for the research approach).

Figure 1 Research approach



This qualitative study focuses on 43 tourism SMEs, STOs and DMOs that participated in the EDP “Digital Tourism Expert – DTE”, a 3.5-year initiative (2018–2021). Here, a qualitative research design is adopted to understand organisational learning by incorporating the existing knowledge body of OLT (Argote, 2011) and connecting it with the two concepts of sustainable tourism (Schianetz *et al.*, 2007) and digital transformation (Streimikiene *et al.*, 2021).

3.2 Data collection

The study’s methodology builds on the means of data collection: from November 2020 to February 2021, two authors conducted 30 in-depth semi-structured interviews with EDP-participating executives until data saturation was reached (Patton, 2015). The duration of the EDP and involvement of the authors in the execution of the programme enables this study to build on long-term observations and provide a longitudinal perspective on organisational learning of tourism organisations. Based on the principle of judgmental sampling, 30 of the 43 participating tourism organisations were selected based on the following categories: divergent organisation types, participation within the EDP in divergent modules and divergent executive roles in the organisations. Accordingly, the researchers contacted them via e-mail to take part in the interviews. As usual for judgmental sampling, organisations were deliberately selected, because it was assumed that they can provide

information which cannot be obtained from others (Maxwell, 2013). Prior research identified DMOs, STOs and SME consultants as the drivers of digital transformation and sustainable tourism in the tourism industry (Hristov and Ramkissoon, 2016; Marx, 2019; UNWTO, 2004; Xiao *et al.*, 2017). Therefore, participating executives of these three types of organisations were investigated in this study as it was assumed that they could provide information that could not be obtained from others (Maxwell, 2013) (see Table 1). Thus, in line with the arguments of Gioia *et al.* (2012), this study emphasises “knowledgeable agents”, where the representatives construct their organisational realities to develop a new concept based on existing theories about digital transformation, sustainable tourism, organisational learning and executive education. In line with a critical realist paradigm, the perceptions of EDP-participating SMEs, STOs and DMOs were interpreted and analysed to present their voices by developing the concept of organisational learning in relation to existing theories (Easton, 2010). By identifying these connections between current concepts, propositions can be developed to guide future research and extract transferable concepts (Gioia *et al.*, 2012).

Owing to the coronavirus disease (COVID-19) induced regulations, Zoom, Microsoft Teams or Skype were used to conduct and record online interviews. The resulting audio file was transcribed using MAXQDA 2020 Plus. The interviews lasted, on average, 43 min. The interview guidelines (see Table 2) were developed based on previous key literature (Conger and Xin, 2000; Mihalic, 2020; Morellato, 2014; Vial, 2019) and pretested with two participants of the EDP.

Following Orb *et al.* (2001), this study adhered to the ethical principles of autonomy, beneficence and justification in qualitative research. In particular, the EDP participants’

Table 1 Interviewee profiles

Code	Organisation	Position	Gender	Age (years)
STO1	STO	IT operations manager	Male	50
STO2	STO	Cooperation manager	Female	44
STO3	STO	Data and innovation manager	Male	50
STO4	STO	IT operations manager	Female	35
STO5	STO	Data and innovation manager	Female	29
STO6	STO	Destination services	Male	51
STO7	STO	Digital service manager	Male	47
STO8	STO	Digital strategy development and smart data	Male	42
DMO1	DMO	Online marketing manager	Female	30
DMO2	DMO	Management assistance	Female	47
DMO3	DMO	Digital systems and data	Female	35
DMO4	DMO	Online marketing manager	Female	32
DMO5	DMO	Managing director	Female	36
DMO6	DMO	Managing director	Female	34
DMO7	DMO	Management assistance	Female	27
DMO8	DMO	Managing director	Male	45
DMO9	DMO	Online manager	Female	41
DMO10	DMO	Managing director	Male	53
DMO11	DMO	Digital project manager	Female	32
DMO12	DMO	Marketing manager	Female	53
DMO13	DMO	Managing director deputy	Female	35
DMO14	DMO	Marketing manager	Female	38
SME1	SME consultant	Managing director	Male	41
SME2	SME consultant	Managing director	Male	45
SME3	SME consultant	Human resource management	Female	39
SME4	SME consultant	Managing director	Female	36
SME5	SME consultant	Chief technical officer	Male	36
SME6	SME consultant	Managing director	Male	48
SME7	SME consultant	Managing director	Male	46
SME8	SME consultant	Managing director	Female	40

Table 2 Interview guideline

Interview question	References
<p><i>EDP</i></p> <p>Please describe your experience with the “Digital Tourism Expert” EDP</p> <p>What benefits are you deriving from the EDP?</p> <p>Can you please explain what the EDP has changed in your organisation?</p> <p>How is the gained knowledge shared in your organisation?</p>	<p>Adeyinka-Ojo <i>et al.</i> (2020), Bharadwaj <i>et al.</i> (2013), Conger and Xin (2000), Morellato (2014)</p>
<p><i>Digitalisation</i></p> <p>What do you understand by the term digitalisation?</p> <p>What are the main digitalisation challenges faced by your organisation and macro-region?</p> <p>What would you need to successfully face the digital transformation challenges?</p>	<p>Alford and Jones (2020), Calvini <i>et al.</i> (2009), Vial (2019)</p>
<p><i>Sustainable tourism</i></p> <p>What do you understand by the term ‘sustainable tourism’?</p> <p>What is the role of tourism planning in sustainable tourism development?</p> <p>Who is involved in tourism planning? What are their roles?</p> <p>How has the EDP helped you to contribute to sustainable tourism?</p> <p>To what extent do you utilise digitalisation for more sustainable development?</p> <p>How could you contribute to sustainability with further digitalisation improvements?</p>	<p>Agyeiwaah <i>et al.</i> (2017), Lordkipanidze <i>et al.</i> (2005), Mihalic (2020)</p>

rights were recognised by providing relevant information to the interviewees, highlighting voluntary participation and the right to withdraw from participation, ensuring confidentiality and anonymity for the interviewees and considering any vulnerabilities (Orb *et al.*, 2001).

3.3 Data analysis

Analysis of qualitative data comprises assignment of codes to the data set by sorting the material to identify similar expressions, patterns, emerging themes, differences and common sequences, thereby enabling comparison of the findings with the current knowledge body on organisational learning in the form of theories and concepts (Miles *et al.*, 2020). In this regard, the template analysis approach was followed as a systematic and rigorous guideline (King, 2017), using MAXQDA 2020 Plus as a qualitative data analysis software. Accordingly, the authors developed an initial coding template, with *a priori* codes focusing on *a priori* themes. Next, two of the authors revised the coding template to enhance the quality of data analysis. After these individual efforts, all the authors discussed the parallel coding findings, which resulted in rewording and amalgamation of categories to develop the final coding template (King, 2017). The involvement of several researchers’ interpretations of the data ameliorates the validity and reliability of the present study (Golafshani, 2003) via investigator triangulation (Decrop, 1999). Moreover, the subjectivity in qualitative research was mitigated by incorporating the different perspectives of all interviewees to provide a comprehensive understanding of organisational learning (Madill *et al.*, 2000).

4. Results

The final coding template (see Table 3) summarises the results.

4.1 Knowledge creation

The executives interviewed indicated that they generated knowledge within their organisations through in-depth knowledge transmission of the EDP. Furthermore, the interviewees emphasised that the exchange within the EDP focused on the interaction between programme participants: “And there is also an exchange of knowledge because

Table 3 Final coding template

<i>Category</i>	<i>Code</i>	<i>Exemplary quotes</i>
(i) Knowledge creation	Knowledge transmission of the EDP	"We generated much deeper know-how from the programme. The things we did, I already knew roughly superficially what they were about. But the EDP speakers went much more in depth." (STO8)
	Knowledge exchange	"I can only emphasise that there should certainly be more offers as the 'Digital Tourism Expert', because especially in the private sector, I would say, compared to academia, there is still a lot of ignorance and also a lot of, a great inhibition threshold that you can cooperate somewhere and gather knowledge from each other and thereby create something great." (SME8)
(ii) Knowledge retention	Utilisation of digital technologies	"I found Schema.org extremely good and we started the transfer project with it. [...] I found that exciting because it had been an issue for a while before. But something that has always been a bit neglected, I have to say. I have always been aware that you should do these Schema.org annotations, especially now that you can see in Google Search how prominently it is been displayed in recent years." (STO4)
	Data value creation through digitalisation	"Yes, and simply also this, this handling of data, that one is consolidated, that one has the technical and analytical skills to deal with it." (STO5)
(iii) Knowledge transformation	Knowledge implementation	"Of course, we had already initiated things through certain interconnections before this programme started, but of course it has then also intensified a bit, so that we have drawn the focus even more strongly." (STO7)
	Contribution to economic, social, and environmentally sustainable tourism	"Sustainability has an ecological, economic, and social component. We anchored this three-part strategy in our destination very firmly. We have also deliberately set targets in all categories. Therefore, for me, sustainability consists of these three components. It is simply about leaving the world a little better than we found it, in all areas." (DMO6)
	Network exchange to enhance sustainable tourism	"I am sure that the networking with other programme participants in the industry will continue over the next few years. One simply got to know each other [...] and with others, that usually, as an entrepreneur, you are on the market in a certain competition and you do not talk every day with a competitor or with one of your competitors." (SME6)

some of us were not yet familiar with it at all, and others were already a bit advanced" (STO3), as well as on the interaction between science and practice, contributing to the creation of knowledge.

I can only emphasise once again that there should certainly be more offers like the DTE, because there is still a lot of ignorance in the private sector vis-à-vis academia when it comes to such things. (SME8)

Regarding knowledge transmission, the interviewed executives indicated that the EDP provided information on sustainable tourism development and supported the organisations in creating knowledge on sustainable tourism:

It was within a module that these SDGs came into play, the UN's Sustainable Development Goals. And this topic interested me at that time, I'll say, superficially, but was then deepened in this module [...]. Then I thought to myself, well, if the others are all rushing into schema.org semantic annotation of websites, [...] I would rather enter the meta-levels. (SME6)

4.2 Knowledge retention

The interviewees further indicated that the created knowledge was retained through a multifaceted process, focusing on divergent digital transformation dimensions, including utilisation of information systems and platforms and data value creation. Executives interpreted digital technologies as a fundamental requirement for digital transformation. The EDP initiated the deployment of purchasable standard software systems, such as online meeting systems or customer relationship systems, which enabled organisations to create new processes or digitalise existing ones. Organisations also joined online platforms, such as Facebook and Twitter, to solve marketing tasks.

Digitalisation also has an impact regarding the homepage, to Facebook, to social media channels. (DMO10)

However, participants also reported that the EDP enabled their organisations to implement new technological concepts, such as website annotations or responsive websites.

I think this will be a longer project, to be honest. I see this more as a kick-off for other projects to implement Schema.org. We will take one data type and annotate it. But we would also like to do this with much more data. (STO4)

Data were reported as a valuable source of information for organisations. However, handling, transforming, using and sharing data were perceived as complicated tasks, with data handling and access being the most significant issues. Data were often scattered in different sources and were unstructured and incomplete. To overcome this barrier, the organisations proposed the creation of a data hub initiated within the EDP:

We have a big project called VCloud, which is a big data hub where we bring together all the information that is relevant to tourism. Yes, and the vision is that we make it open data. (STO7)

However, large data sets require adequate protection. Data privacy concerns are contrary to those of open data access. "The General Data Protection Regulation was quite difficult for everyone in the digital domain and of course, still hits us with all the cookie policies and so on" (STO2). The EDP participants stated that sharing data between organisations might create benefits for all:

An open directory, structured according to open technologies, is beneficial for sustainability in several respects. Firstly, different companies can access this data because it is openly accessible. And secondly, they are categorised according to other open proposals or directories, so they can be reused digitally and read as well as utilised by autonomous machines. (SME5)

4.3 Knowledge transformation

Knowledge content in the organisations was directly implemented: "We were able to exploit the gathered knowledge well. We did not do the transfer project for the sake of the transfer project, but that was an operational and practical use of know-how" (STO8). The programme also acted as an impetus to advance transformation: "We also focused on the creation of ideas. I know what we could do because we heard the different opportunities in the EDP, but we also got the whole picture" (DMO13) and continue to focus on existing projects, as a reinforcer of developments:

The "DTE" has also brought us a great deal for our transfer project, namely confirmation that we are probably on the right track with the path we have taken. We are very satisfied with the EDP. We had expectations about what the "Digital Tourism Expert" is supposed to achieve [...], and it definitely helped us to develop competencies on this matter. (DMO8)

Participating executives perceived transformation as a contribution to sustainable tourism. Interviewees addressed overcrowding, a negative tourism development, as a specifically

representative effect of digital transformation on sustainable tourism. According to the executives, social sustainability relates to a consideration of culture and employees in tourism and hospitality and of communities and residents: "Sustainability in the social and cultural sphere in the regions is of major relevance because people live here because children go to school here because people are buried here because we live here" (DMO12). The executives discussed digital transformation using digital tools to guide guest flows. The following quotes highlight a common problem and the potential for digital transformation to solve these problems and contribute to sustainable tourism:

In normal times, like all ski resorts, we already have a problem. There are then a lot of guests in the region, and all want to go to the same resort. Consequently, there are traffic jams [...] on the road, crowds when getting there, crowds when lining up for the cable car and so on. (DMO12)

With digitalisation, certain things are more visible today [...]. When going to a ski resort today, I can check whether the ski resort is crowded or not. [...] This simply gives you the opportunity to decide for yourself whether you want the crowds, to be on the slopes with 10,000 other people, to go to another ski resort [...], or to plan the day differently. (STO8)

The interviews discussed the economic pillar of sustainable tourism primarily in terms of resource optimisation. Executives believed digital transformation contributed to their organisations in terms of personnel costs, printing costs and efficiency increases, which supported economic sustainability. Sustainable tourism was ensured through a regional focus in which value creation is promoted by, for example, considering small-scale structures at the destinations. For the interviewees, digital transformation served as a collaboration enabler:

Economic sustainability has to be assured. We have small businesses, we have family businesses, we have medium-sized businesses, and they make up the backbone of this destination here. (DMO12)

For me, digitalisation has two aspects. One is that we are digitalising communication and collaboration. [...] We have provided the opportunity for employees to work de facto from anywhere and to communicate and work with each other from everywhere. That is the aspect of communication and collaboration [...] then, for me, there is the aspect of automation. In the context of automating, speaking, digitising standard processes relieve the workforce here in the end. (STO1)

For environmentally sustainable tourism development, topics such as environmental protection and climate change were discussed. In particular, digital transformation reduces printing materials such as guest cards, by making all information available via online platforms, which reduces environmental pollution and saves costs: "The electronic guest card would be sustainable as you are saving plastic waste" (DMO1). Furthermore, according to the interviewees, digital transformation created awareness of the effects of environmental tourism. For instance, online campaigns were started to encourage responsible behaviour:

We have this situation in the destination where people do not know how to behave in nature, for example, they leave their garbage everywhere. (SME6)

We started an awareness campaign for environmentally friendly behaviour, and that is where environmental sustainability is addressed. That is really sustainability now in terms of environmental protection, and nature conservation. (SME6)

The topic of mobility was also discussed in the interviews, including public transport and electric mobility for the journey and mobility within the destination. According to the executives, digital transformation can contribute to creation of platforms that facilitate this change by making relevant information available and providing booking options for public transport:

We have a very high proportion of car travellers in Tyrol, but we have been trying for many years to get people to use public transport. (STO7)

So, a lot is happening concerning this alternative travel, which is a big topic where digital platforms are necessary, as the last mile and the first mile to a destination are often the problems that people then arrive with their car. [...] And that's where digital platforms are needed to book the entire journey. (STO5)

Moreover, according to the executives, knowledge transformation is promoted by experience exchanges within networks that emerged from the EDP. STOs consider themselves to be initiators and awareness builders, as the following quote shows:

We see ourselves more as facilitators, mentors, and initiators of digital developments. In terms of digitalisation, each destination has its little digital world with a wide variety of products, with a wide variety of software projects, and we try to bundle this at the state level and bring it together. (STO7)

While DMOs are increasingly expressing themselves as facilitators, especially for SMEs, by transferring knowledge or initiating ideas within the organisations, SME consultants directly support companies in tourism:

We are more of a service provider or supplier and help others to implement such things. For example, being a company similar to a health insurance company, we develop something for appointments with doctors, illness registration and so on, also to ensure communication between the employee and the employer and the insurer. (SME2)

The executives interviewed believe that SMEs in tourism need crucial support through networks. Understanding digital business models and the benefits of digital transformation represent vital challenges with several requirements. Firstly, the interviewed executives demanded strong leadership.

We can be a role model as a destination management organisation. We need to communicate openly and transparently to be a role model. We can say that sustainability is part of our decision-making process. In the end, of course, it always depends a bit on the structure of the businesses, where it is easier to insist on sustainability than not. (DMO12)

Furthermore, digital transformation and sustainable tourism goals are perceived as long-term missions that should match a long-term orientation. In addition, collaboration is identified as a critical factor in successfully overcoming barriers, such as missing know-how or resource bottlenecks. Interviewees state that all efforts require a strong focus on customer needs in view of the changing attitudes of tourists, who are shifting towards responsible behaviour and can be managed accordingly.

The interviewees believe that the COVID-19 pandemic has influenced digital transformation in their organisation and their contribution to sustainable tourism.

However, the pandemic also prompted government regulations that prevented effective collaboration. In this regard, digitalisation projects had to be reduced in size and scope. Executives also reported that financial budgets are one of the main barriers to digital transformation efforts. Daily business and missing capabilities and capacities, such as workforce, time or knowledge, were listed as further barriers to progress.

5. Discussion

This study explores how organisational learning initiated by executive education contributes to sustainable tourism by facilitating digital transformation. The study's findings demonstrate that the EDP stimulates knowledge creation within organisations, leading to knowledge retention and transformation (Argote, 2011), supporting OLT (Sullivan and Nonaka, 1986). Corresponding to claims of previous research by Morellato (2014), knowledge creation is

perceived by interviewees to result from teaching technological possibilities and potentials (Calvini *et al.*, 2009). The focus on tourism enabled participating organisations to transmit the knowledge obtained during the EDP. Furthermore, knowledge creation is initiated through knowledge exchange with science and other EDP participants, thus supporting the findings of Argote and Miron-Spektor (2011) that the environment comprising customers, competitors or institutions determines organisational experience. Moreover, this suggests that knowledge creation is also based on already obtained organisational competencies (Calvini *et al.*, 2009) as internal knowledge stocks (Linder and Sperber, 2019) and, thus, on digital competencies. Contrary to the assumptions of Vries *et al.* (2020) and Tushman *et al.* (2007), the participating organisations did not feel that the needs of the participants were not addressed or that the programme was disconnected from tourism practice. Following experiential learning theory, an EDP serves as a proxy for experiential transformation that enables creation of knowledge through core competencies (Kets de Vries and Korotov, 2007; Kolb, 2015). The present study underlines the importance of executive education for organisational learning and accordingly extends its theoretical lens by demonstrating the importance of EDPs for aligning organisations to new directions (Conger and Xin, 2000):

- P1.* EDPs serve as an experiential transformation proxy that initiates the creation of knowledge in organisations by transmitting knowledge content and knowledge exchange.

The participating tourism organisations further indicated that the created knowledge was retained through utilisation of digital technologies, highlighting the implementation of new technological concepts as well as the application of existing online platforms. Corresponding to organisational learning attempts to implement digital skills in organisations (Vial, 2019), the interviews demonstrate that the EDP facilitates information on digitalisation. The results show that EDP participants initiate digital transformation within the organisation, further highlighting data value creation as a determinant of their knowledge retention. In this regard, a common challenge identified in the study is the creation of value from data. The findings indicate the potential for open data initiatives to share and gather data and transfer skills, expertise and knowledge, as suggested by Xiao *et al.* (2017). Corresponding to Calvini *et al.* (2009) and Alford and Jones (2020), digital competencies were developed as digital skills within the participating organisations, focusing on the adaption of digital technologies (Bayraktaroglu and Kutanis, 2003), as well as highlighting data value creation (Calvini *et al.*, 2009), which leads to the following proposition:

- P2.* The created knowledge is retained through the utilisation of digital technologies and reinforcement of digitalisation through data value creation as digital competencies.

Knowledge transformation was based on direct implementation through transfer projects and reinforcements triggered by the programme, referring to organisational learning attempts about changing cognitions and behaviours (Brix, 2017), and through exchange with other participants, which aligns with Ruhanen *et al.*'s (2021) conclusions about tourism organisations acquiring skills and knowledge through collaboration. Thus, according to Elezi and Bamber (2022), knowledge-synergistic effects can be achieved. This finding corresponds to Kets de Vries and Korotov's (2007) claim that EDP outcomes should focus on change, not just knowledge creation. Hence, the interviews demonstrate that the created and retained knowledge was transferred to contribute to sustainable tourism, highlighting the link between digital transformation and sustainable tourism development and extending OLT. Previous studies have shown that organisational learning can promote organisational transformation to enhance sustainable tourism (Schianetz *et al.*, 2007). Organisational learning also triggers implementation of digital competencies (Calvini *et al.*, 2009; Marx *et al.*, 2021; Vial, 2019). This study combines these suggestions by exploring the relevance of organisational learning for sustainable tourism development by benefiting all three sustainability pillars (Mihalic, 2016) via enabled digital transformation. The social component of sustainable tourism is perceived in line with previous research findings on congestion and

overcrowding (Agyeiwaah *et al.*, 2017). Digital transformation can contribute by guiding guest flows via digital tools to avoid crowding. Targeted collaboration through digital transformation corresponds to a broad stakeholder perspective and long-term focus on the economic pillar of sustainable tourism (van Gils and Weigand, 2020). Interviewees perceive economic sustainability as resource optimisation enabled through a small-scale regional structure. The results also demonstrate a focus on climate change, environmental protection and environmental awareness in tourism organisations. In this regard, environmental sustainability is activated through digital transformation by developing online awareness campaigns, improving online mobility offers and reducing the environmental impact of tourism:

P3. The digital competencies as retained knowledge are transferred through knowledge implementation, contributing to economic, social and environmentally sustainable tourism development.

In line with Marx (2019), who identified various network organisations guiding the tourism industry, this study shows that each participating organisation type considers itself in a position to support other network actors in sustainable tourism development. Furthermore, the results correspond to organisational learning, which states that knowledge transfer results from networks (Reagans and McEvily, 2003). The networks create, distribute and exchange knowledge (Haid *et al.*, 2021; Seufert *et al.*, 1999) to support digital transformation and contribute to organisational learning for sustainable tourism, drawing on OLT (Halme, 2001; Schianetz *et al.*, 2007). In particular, STOs regard themselves as initiators, corresponding to their role as enhancers of competitiveness at destinations (Pike and Mason, 2011). While STOs see themselves as awareness creators, DMOs see themselves as facilitators and knowledge brokers for tourism SMEs. According to Marx (2019), DMOs can take on a leadership role in digital transformation and sustainable tourism (Hristov and Ramkissoon, 2016). Accordingly, the study's results demonstrate that DMOs attempt to transfer knowledge by implementing concepts and ideas within tourism SMEs. Similar to this role is the position of SME consultants, who consider themselves implementers, which aligns with the arguments of Xiao *et al.* (2017) that consultants transfer expertise, skills and knowledge. Thus, the findings demonstrate that digital transformation can only be successfully developed in cooperation to support sustainable tourism, similar to Ruhanen *et al.* (2021) and Xiao *et al.* (2017):

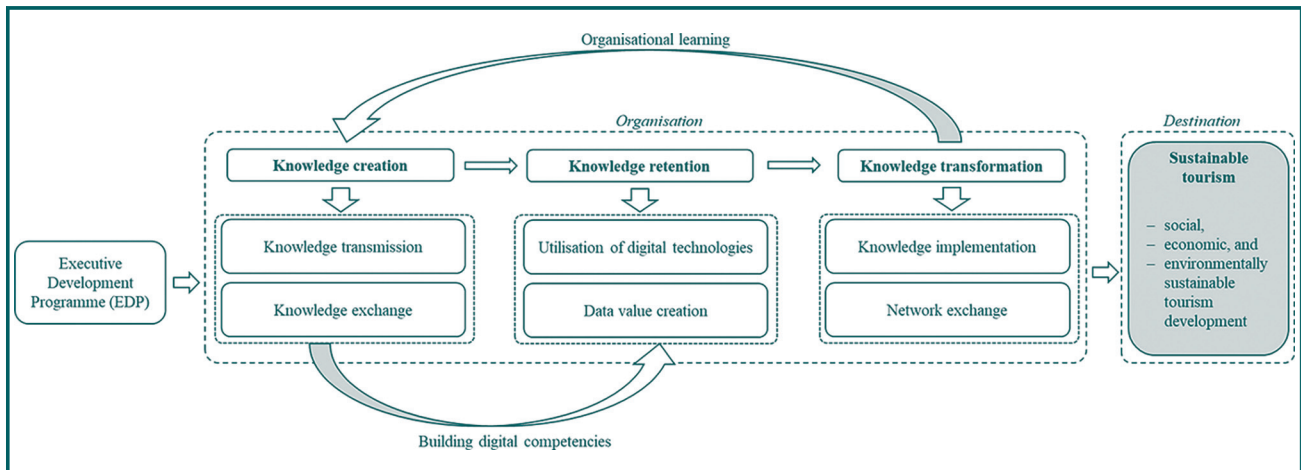
P4. Knowledge transfer is enabled by network exchange, thereby supporting digital transformation and contributing to sustainable tourism.

However, data protection concerns highlighted in this study and previous studies (Sharif *et al.*, 2020; Sharif *et al.*, 2021) suggest knowledge leakages' impact on knowledge transfer needs to be considered.

6. Conclusion

This study demonstrates the importance of organisational learning in coping with challenging environments in tourism practices for the advancement of sustainable tourism (Schianetz *et al.*, 2007). It extends OLT (Argote, 2011; Argote and Miron-Spektor, 2011) by demonstrating how EDPs initiate knowledge creation, retention and transfer to encourage sustainable tourism by expanding the organisational learning process with digital transformation and sustainable tourism development (see Figure 2). In line with executive education's role in aligning organisations to new directions (Conger and Xin, 2000), an EDP initiates organisational learning. Thus, corresponding to OLT (Argote and Miron-Spektor, 2011), an EDP acts as an experiential transformation that enables knowledge creation (Conger and Xin, 2000; Fiol and Lyles, 1985) through knowledge transmission and exchange. Thus, it increases the knowledge available to participating organisations through knowledge management (Cooper, 2002; Wiig, 1997), which can be retained (Argote, 2011; Brix, 2017) through utilisation of digital technologies and data value creation, which represent digital competencies (Calvini *et al.*, 2009; Alford and Jones, 2020). By using retained knowledge and digital competencies, tourism organisations

Figure 2 Organisational learning process



transfer knowledge through implementation and network exchange to enhance social, economic and environmentally sustainable tourism development (Mihalic, 2020).

The study demonstrates the important contribution of the organisational learning process, initiated through EDPs, on the advancement of sustainable tourism through digital transformation. By demonstrating the relevance of the learning process for digital transformation and development of digital competencies (Brix, 2017), this study strengthens the OLT and informs sustainable tourism research on the relevance of executive education as a driver for sustainable tourism development. On a more general note, this study underlines the relevance of OLT in tourism; other studies adopted this concept to understand learning processes in disaster management during the ongoing COVID-19 pandemic (Bhaskara and Filimonau, 2021).

Owing to the qualitative research character of the study, the generalisability of the findings is limited. Thus, future research should investigate the potential of organisational learning in a longitudinal research design, studying the extent to which learned content within organisations is shared and installed over several years. Further limitations of this study relate to destination peculiarities and the COVID-19 crisis. Firstly, tourism destinations in Austria are community-oriented and thus differ from the relatively corporate-governed perspective of other destinations, more common in, for example, the North American setting. In this context, the regional focus of this study represents a limitation. Secondly, the COVID-19 crisis, as a novel challenge, strongly affected the opportunities to implement digital technologies in tourism organisations. Future research should investigate the effects of EDP's network actions first-hand during crisis times. Moreover, even though the interviews were conducted during the pandemic (in February 2021), the study refers to an EDP conducted before the pandemic (2018–2021). Accordingly, the results are framed by participants' experiences, which are not exclusively related to the crisis.

The study has implications for tourism policy. Notably, EDPs demonstrated the potential of including digital technology implementation for organisations and destination management to advance sustainable tourism. The COVID-19 crisis has placed digital transformation and sustainable tourism at the centre of business leaders' future orientation. Digitalisation has been found to be a major enabler of sustainable solutions in tourism destinations. Tourism policy needs to address and exploit these opportunities because tourism organisations demanded learning initiatives for developing digital competencies even in the EDP conducted during non-crisis times.

Organisations and individuals participating in EDPs must be carefully selected as the composition of the participants influences the organisational learning process. As this study showed, cooperation between participants determined the resulting knowledge transfer. To optimise their relationship, EDPs need to carefully design the content (module content, products, services), form (duration, closeness of the relationships) and intensity (e.g. communication frequency) of networks (Seufert *et al.*, 1999). Finally, this study showed that EDPs should target action and implementation phases, bringing together various participants and supporting learning mechanisms through, for example, transfer projects. The transfer projects in the EDP helped to transfer knowledge into know-how. They instilled digital transformation and sustainable tourism-related concepts in the DNA of the participating tourism organisations.

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