

Supporting green transition in the Finnish tourism sector by identifying green skills

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Abstract

Green skills are a prerequisite for a sustainable and resource-efficient tourism sector and an essential element in tourism employment. To support the sector's green transition, it is critical to bridge existing green skills gaps. Therefore, this qualitative research identifies the relevant and up-to-date green skills necessary when working in the tourism sector for the sector to become committed to a more sustainable world. The main data consisted of both secondary and primary (individual interviews, n=11 and a group interview) data sources. Five themes describing the green skills emerged from the data: (1) environmental management, (2) resource-efficiency, (3) carbon management, (4) green product and service development, and (5) sustainability communication. The findings have important practical implications for tourism education and training providers and tourism employers.

Keywords: green skills, green transition, tourism, skills development, sustainable development.

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1. Introduction

It is considered increasingly important that the tourism sector contributes to the green economy by developing its sustainability (Reddy & Wilkes, 2015). It is necessary for the future employees to be conscious of the environment and to commit to the preservation of the environment (Kamis, Alvi, & Yunus, 2017; Vona *et al.*, 2018). To accomplish this, jobs in the tourism sector demand particular green skills. These skills are regarded as a critical part of the business practices enabling sustainable development (Carlisle *et al.*, 2021). Indeed, green skills include various skills the employees need to apply sustainable practices successfully (Carlisle *et al.*, 2021; Ivanova, Ivanov, & Petkova, 2021). They help to address the environmental sustainability challenges and to improve environmental performance in the tourism sector as well as to identify new business opportunities (Cabral & Jabbour, 2020; European Commission, 2022).

However, shortages of qualified workers hamper the tourism sector's shift to a greener economy (ILO, 2013). This means that it is imperative to identify the green skills needed in the existing and new jobs supporting the transition to a greener economy (Maclean, Jagannathan, & Panth, 2018; Nikolajenko-Skarbalė, Viederyte, & Sneideriene, 2021). The first step is to understand the changes caused by the green economy to the skill requirements. The second step is to integrate these skill requirements into education and training programmes (Brown, 2013; Cedefop, 2010; Pavlova, 2018; Stanef-Puica *et al.*, 2022). These two issues are critical because education and training have a positive impact on the green transition (Mustapha, 2015; Nikolajenko-Skarbalė *et al.*, 2021).

No doubt, researchers are more interested in understanding the connection between the tourism sector and the green economy, which is proven by the increasing number of studies. However, a careful examination of the literature reveals that only a few of these studies address green skills. As these skills are high on the political agenda and receive wider attention from the policy makers, there is a fertile ground for tourism researchers to study this topic more profoundly. Thus, the purpose of this article is to contribute to the theory and practice by increasing understanding of the relevant and up-to-date green skills necessary in the tourism sector to support the green transition. The research objective is to identify the required green skills when working in the tourism sector to bridge existing skills gaps, address skills shortages, and foster green skills development. The research question is: What are the required green skills when working in tourism for the sector to become committed to a more sustainable world?

The context of the study is a country in Northern Europe, Finland. It provides a great opportunity to investigate the green skills in tourism with its specific features. Finland is known for its leadership in environmental policy and sustainable development (OECD, 2021). The country is very committed to global Sustainable Development Goals (SDGs) and has been ranked number one in an international comparison of sustainable development in 2021 (Sachs *et al.*, 2021). According to Finland's Sustainable Growth Programme (cf. Finnish Government, 2022), Finland's objective is to achieve carbon neutrality by 2035. The main goals consist of making the country a world leader in the hydrogen and circular economies and in emission-free energy systems as well as other climate and environmental solutions. The programme also emphasises raising skill levels as one of the key elements in accelerating sustainable growth.

Sustainable use of natural resources is a priority in the Finnish society. Measured by the proportion of forest land, Finland is the most forested country in Europe as forests cover more than 70 per cent of its land area (Metsähallitus, 2022). Every municipality also has waters: the water-rich country has 188,000 lakes, 76,000 islands with an area of 0.5 ha or more, 647 rivers and in total 314,000 km of coastline (Ministry of Employment and the Economy, 2009). These large areas of forests and waters as well as sparse population provide an excellent setting for exercising public access rights. They refer to the right

of everyone to enjoy the areas regardless of who owns them. For these reasons, Finns have an especially close relationship with nature and take conservation and sustainability issues very seriously.

Visit Finland's vision is that Finland will become the most sustainable travel destination in the world, which means that supporting sustainable development is one of the priorities in Finland's tourism strategy (cf. Ministry of Economic Affairs and Employment of Finland, 2022; Visit Finland, 2021). In 2019, tourism exports accounted for 17% of the export income generated by services in Finland. Tourism export share was 5.3 billion EUR, and it has doubled since the year 2000. The total demand for tourism was approximately 16 billion EUR and its direct share of GDP was 2.7%. In 2019, the tourism sectors employed about 154,000 persons, which consisted of about 5.8% of all employed persons in Finland.

In Finland, pure nature is the main tourism attraction. The most important segment of this niche-tourism destination consists of the so-called Modern Humanists. They are considered as experienced travellers who prefer locality over mass tourism and are enthusiastic about experiencing nature. Thus, the core segments of the Finnish travel markets are nature wonder hunters seeking unique nature experiences, nature explorers looking for peaceful nature to unwind, and activity enthusiasts enjoying an active holiday in nature (Business Finland, 2022a).

Since sustainability is emphasised in all tourism development activities, Visit Finland has launched a Sustainable Travel Finland Programme (cf. Business Finland, 2022b) for tourism enterprises and destinations. The programme and its criteria relate to Sustainable Development Goals (SDGs) and sustainable tourism indicators, but it has been applied to the Finnish context. To gain the label, enterprises and destinations must undergo the entire sustainability programme. The main idea is to help them to adopt sustainable practices. It also makes it easier for tourists to identify those actors taking sustainability seriously.

2. Literature review

2.1. Green jobs in tourism

Shifting to a green economy is regarded as a solution to sustainable development (Nikolajenko-Skarbalé *et al.*, 2021; Stanef-Puica *et al.*, 2022). The concept of the green economy has increased its importance since the 2008 financial crisis (Tanasie *et al.*, 2022). It is defined as an economy, which is resource-efficient, low carbon, and socially inclusive (Tanasie *et al.*, 2022; UNEP & UNWTO, 2012). The green economy is a unifying concept that incorporates features from circular economy and bioeconomy (Toubes & Araújo-Vila, 2022). Several keywords are attached to it, e.g., environmental sustainability, climate, green, eco, natural, carbon, energy, water, renewable, and waste (D'Amato *et al.*, 2017). Toubes and Araújo-Vila (2022) propose that transformation of enterprises towards green economies, reducing energy consumption and carbon emissions, managing waste, and understanding the perceptions of the tourists related to the enterprises and their efforts towards sustainability are the main topics in the green economy in the tourism sector.

Green jobs are developed as a result to the green economy transition. In the literature, the most widely accepted definition of green jobs is the one by the International Labour Organization (ILO). In their Green Job Programme, ILO (2009) defines these so-called green jobs as jobs that reduce the environmental impact of the economic sectors and enterprises. Green jobs are decent jobs that limit greenhouse gas emissions, decrease consumption of energy and raw materials, minimise waste and pollution and protect and restore ecosystems as well as support and mitigate the impact of the climate change (ILO, 2013; Tanasie *et al.*, 2022). Stanef-Puică *et al.* (2022) propose that the concept of green jobs relates to sustainable development, green economy, circular economy, energy, welfare economy, economic development, and employment.

Simultaneously, the European policies highlight that the transition to the green economy requires specific skills. The European Green Deal (EGD), as the EU's new growth strategy since 2019, emphasises that it is essential to provide future-proof jobs and skills training for the transition towards a greener future. This was already noted by the European Commission (2014) in their Green Employment Initiative: an integrated framework addressing labour market and skill challenges and opportunities to support the transition towards a green economy. The initiative stresses that this transition creates additional employment as well as replaces and redefines some jobs.

Ladkin and Szivas (2015) state that it is complicated to define what is a green job and what is not. Green jobs could be characterised as 1) existing jobs with increased demand in green economy, 2) existing jobs changing in tasks and skills, 3) emerging new jobs caused by the demand for the green economy, 4) non-green jobs not very likely to be substantially affected by the green economy (Bowen, Kuralbayeva, & Tipoe, 2018). This means that greening the economy will affect the skills needs. Adjustments in skills are required since the demand for some occupations is increasing, new occupations with new skills profiles will be created, and the tasks in existing occupations and industries are changing (Cedefop, 2012). So far, most of the jobs have been created through changing existing jobs through the addition of skills in medium-skill-level occupations (ILO, 2022).

There does not exist common job classifications of green jobs in tourism (Arnedo, Sanchez-Bayon, & Sastre, 2021). Green jobs in tourism could emerge from efforts to green the sector as a whole and circular economies in tourism (ILO, 2022). When categorising green jobs, sustainable tourism is usually connected to the protection of the environment (Chernyshev, 2017). It is not the sector's main purpose, but it is significant as the jobs include activities related to environmental protection and managing natural resources. It should be noted that more green jobs in tourism are expected to emerge due to the green transition (Chernyshev, 2017). It is also important to notice that the recovery and rebuilding process of the COVID-19 pandemic makes it possible to generate green jobs contributing to the green economy and decreasing the environmental impact of the tourism enterprises.

Only some research has been conducted on green jobs in tourism. For example, Jarvis, Ram, and Verna (2011) assessed the potential of the green jobs in the tourism sector in the developing countries and proposed that they can be developed by improving energy and resource-efficiency, waste management, recycling, and sustainable services as well as adapting to the climate change. Arnedo *et al.* (2021) analysed the perspectives and challenges that the European Green Deal has for the Spanish hospitality sector and its potential for green jobs. They concluded that green jobs are still rare in this sector but there are many possibilities to increase them. Above all, green skills are increasingly required in already existing job profiles.

2.2. Green Human Resource Management in tourism

A closer examination of the literature reveals that tourism related research on Green Human Resource Management (GHRM) is more common than studies on green jobs. GHRM is defined as the implementation of HRM functions, which supports the environmental performance of the organisations and affects positively to employee pro-environmental behaviour (Elshaer *et al.*, 2021). In recent years, for example, Yusoff *et al.* (2018) examined how green HRM practices and environmental performance are connected in the hotel sector as well as Ali Ababneh, Awwad and Abu-Haija (2021) investigated the connection between green HRM practices, transformational leadership, and employee engagement with environmental initiatives in the same context. Moreover, Elshaer *et al.* (2021) explored in small tourism enterprises how GHRM relates to their environmental performance and Al-Romeedy (2019) identified how travel agencies adopt GHRM practices. Studies related to financial performance have investigated e.g., the relationship between GHRM and Perceived Financial Sustainability (Abdeen & Ahmed, 2019) and the role of GHRM practices on the turnover intention of the millennial employees

(Islam *et al.*, 2020). In addition, the interrelationship between GHRM and green innovation as well as the mediating roles of green human capital and environmental knowledge in the hotel sector has been explored by Munawar *et al.* (2022).

These studies have paid attention to green skills development and training as a key GHRM intervention since increasing the employees' skills and engaging them in green behaviours is essential. The researchers underline that so-called green training and development are closely linked with environmental performance (Pham, Tuckova, & Jabbour, 2019; Yusoff *et al.*, 2020). By training, the employees understand environmental concerns more constructively, and they can utilise green skills for organisational development (Munawar *et al.*, 2022). Furthermore, the studies conclude that GHRM practices are closely related to improving the environmental and financial performance of the enterprise (Abdeen & Ahmed, 2019; Renwick, Redman, & Maguire, 2013).

2.3 Green skills in tourism

There are many existing definitions of green skills. Green skills are the professional and vocational skills needed for greening the existing jobs and new green jobs required by sustainable development and the climate change (Brown, 2013). According to Pavlova (2018, 4), green skills relate to reducing the environmental impact and supporting the economic restructuring to attain cleaner, more climate resilient and efficient economies that preserve environmental sustainability and provide decent work conditions. Cedefop (2012, p. 20) views green skills as the knowledge, abilities, values, and attitudes required to live in, develop and support a sustainable and resource-efficient society. Furthermore, Martinez-Fernandez, Ranieri, and Sharpe (2013, p. 10) propose that green skills are needed to adapting products, services and processes to the climate change and the related environmental requirements and regulations.

There are some studies which have focused on green skills in tourism, but mainly by studying the skills gaps, not defining the content of green skills. For example, Carlisle *et al.* (2021) studied the main green skills gaps in the tourism and hospitality sector in Wales. In addition, Carlisle *et al.* (2022) analysed the gap between the self-reported level and the required future level in green skills in the European tourism sector. In these studies, green skills include various environmental managerial skills and operational skills e.g., (1) skills in energy-efficiency and water consumption, (2) waste management, recycling and composting, (3) conservation of biodiversity, (4) promotion of sustainable transport, (5) promotion of environmentally friendly products and services and (6) knowledge of the climate change. Carlisle *et al.* (2022) concluded that the size and type of the tourism sector influence significantly the current and future levels in green skills as well as the gaps between them.

In addition, Ivanova *et al.* (2021) explored green skills gaps and the expectations of business professionals concerning the employees' needs for green skills in the Bulgarian tourism sector. They utilised the same categorisation of green skills used by Carlisle *et al.* (2021) and Carlisle *et al.* (2022). Their study revealed severe gaps in green skills in the tourism sector, which should be improved by up-to-date and frequent training. Due to these gaps Ivanova *et al.* (2021) concluded that green skills should be integrated in the curricula of higher and secondary education institutions.

Furthermore, Esposto and Annakis (2016) presented methods on how to make a job greener in the tourism sector in Thailand by developing green skills. For this reason, they identified and analysed the green skill gaps and needs. They concluded that the transformation of jobs is strongly connected with skills improvement. Understanding green skills increases productivity, creates employment, and contributes to sustainable development. The same conclusion was reached by Wu *et al.* (2016) in their investigation on the impact of green skills on the overall performance of hotels in Taiwan.

3. Methodology

The main data of this qualitative research consisted of both secondary and primary data sources. The secondary data comprised of (1) the newest and most relevant national tourism strategies and sector-related reports (i.e., Finland's tourism strategy for 2022–2028; Tourism sector report; Report of employment in tourism sector; The state of art, challenges and development need in sustainable tourism), (2) existing curricula of tourism bachelor degree programmes (n=12) in Finnish universities of applied sciences as well as (3) national vocational qualifications in tourism, hospitality and restaurant sectors, and (4) the national tourism board's intensive training programmes, i.e., the so-called Visit Finland Academy.

In addition, individual, semi-structured interviews (n=11) were performed to collect the primary data. Eleven interviewees (table 1) were contacted, and purposive sampling was utilised for this study. The interviewees were selected because their enterprises make significant efforts towards environmentally sustainable tourism development and invest in green skills development.

Table 1. Participant profiles of the individual interviews

Interviewee (I)	Job title	Sector	Gender
1	Managing Director/Entrepreneur	Restaurant & Programme Service	F
2	Managing Director/Entrepreneur	Café & Restaurant	F
3	Managing Director/Entrepreneur	Restaurant	F
4	Managing Director/Entrepreneur	Café & Restaurant	F
5	Tourism Manager	DMO	F
6	Hotel Manager	Accommodation	F
7	Tourism Manager	DMO	M
8	Tourism Specialist	Visitor Attraction	F
9	Managing Director/Entrepreneur	Programme Service	F
10	Manager	Visitor Attraction	F
11	Tourism Expert	DMO	F

Furthermore, a group interview was organised to add richness to the research, which was participated by the representatives of four tourism organisations (2 entrepreneurs i.e., owners of micro and small size tourism companies; 1 local government representative; 1 destination management organisation representative).

Each individual interview lasted between 45 min and 1 hr and 30 min. The interviews consisted of a set of open-ended and unstructured questions with the intention to encourage discussion about required green skills in the selected organisations. For the interviews, the researcher created a list of questions based on the purpose of the study. Literature focusing on green skills in tourism was also used when developing questions. For example, the following questions were asked: What does environmental sustainability mean to you? How is this reflected in your enterprise in practice? What skills do you need to apply environmentally sustainable practices and to perform everyday tasks in a sustainable way? Extra questions were asked if needed. The same interview protocol was used in the group interview, but the conversation was let to emerge more naturally between the interviewees. Enough data were collected when the received information reached a saturation point, and no new information was discovered.

Thematic analysis was used to analyse the data. According to Braun and Clarke (2006), thematic analysis is a method for identifying, analysing, and reporting themes and patterns within the data. In this study, themes were generated describing the required green skills and capturing essential meanings in the

data. When analysing the secondary data, the texts related to green skills were separated from the main text. The primary interview data were transcribed. All the data were examined multiple times to acquire a sense of the whole and to identify the most relevant features of the content for further analysis. The codes derived from the data i.e., from the phrases and sentences related to required green skills. In other words, an inductive coding approach was utilised for analysis to identify themes, which is a data-driven process of coding the data without fitting it into an already existing coding frame (Braun & Clarke, 2006).

In the next stage, themes (i.e., groups of content) sharing common features were generated. Similar codes were grouped under higher order headings that represented required green skills. First, grouping the data and analysis was performed separately to the secondary data and then to the primary data. The grouping of the data aimed at reducing the number of themes by breaking down the similar or dissimilar themes into broader higher order themes. In addition, content-related subthemes were sorted into broader themes. Each text was compared with all the texts already allocated to that theme by a constant comparative method. Simultaneously, the preliminary codes were corrected and refined, if needed and mutually exclusive themes of green skills defined. Next, the themes from both data sets, secondary and primary, were reviewed and combined. Similarities and differences were carefully examined to refine the themes. Similar themes were merged and the themes that did not emerge in both datasets and did not have enough data to back them up were removed. The final themes, their definitions and related skills are presented in the table 2. The result section also includes illustrative quotes from the interviews integrated to the text.

4. Results

Based on the interviews, sustainability is the key issue of a successful tourism enterprise and a prerequisite for its survival. In the last years, tourism enterprises have started to understand that sustainability is much more than just recycling and waste management. The importance of environmental issues has rapidly increased as sustainability is one of the main requirements of the tourists.

Altogether, five themes about green skills were formulated from the data (table 2). They describe the required green skills in the tourism sector. Each skills theme was named by using words that characterise their contents: (1) environmental management, (2) resource-efficiency, (3) carbon management, (4) green product and service development, and (5) sustainability communication.

The interviewees estimated that all Finnish tourism enterprises will possess a sustainability certification or ecolabel soon, which requires increasing the skills required in *environmental management*. The management should be aware of how the enterprise impacts the environment, set their environmental objectives and plan, act, and monitor as well as improve their environmental performance. Indeed, environmental management is a continuous and systematic improvement process. The skillset *also* involves skills in integrating the specifics of environmental legislation into the actions of the enterprise. It also includes adopting an environmental management system and sustainability certification schemes as tools to achieve the environmental objectives. Furthermore, this skillset highlights the importance of the skills in using digital technologies to integrate smartness and sustainability to manage the environmental impacts e.g., in monitoring the consumption of resources in tourism enterprises. A café & restaurant owner (I₂) explained about the importance of having skills to continuously manage sustainability that:

“We have just received a sustainability certification and the Sustainable Travel Finland Label... but now the biggest issue, which we are currently thinking about, is... this means that we are not ready in our

sustainability work, we are just starting it. We must verify that we have integrated sustainability in our daily life, and we are every day on the top of the things.”

Table 2. Green skills profile in the Finnish tourism sector

Theme	Definition	List of skills
Environmental management	Skills in managing the impacts of the enterprise on the environment by planning, operating, monitoring, and improving its actions	<ul style="list-style-type: none"> • set environmental objectives • integrate the specifics of the environmental legislation into the actions of the enterprise • adopt an environmental management system to plan, act, monitor, report and improve the performance • apply and manage the sustainability certification schemes • use digital technologies to integrate smartness and sustainability
Resource-efficiency	Skills in reducing, reusing and recycling resources as well as finding and applying opportunities to keep materials and products in use	<ul style="list-style-type: none"> • reduce the use of raw materials, energy and water consumption • increase the use of renewable energy • adopt various preventative measures and recycling practices to minimise waste, in particular, plastic and food waste • collaborate within the value chain to share resources • utilise sustainable procurement practices
Carbon management	Skills in identifying, assessing and preventing the impacts of enterprises on the climate change	<ul style="list-style-type: none"> • identify the sources of greenhouse gas emissions in a tourism enterprise and implement procedures to reduce them • calculate the Carbon Footprint generated by the tourism enterprise and make plans on how to reduce and compensate for it • promote the sustainability of transport from the perspective of the tourists and supply chains
Green product and service development	Skills in developing green tourism products and services with a positive impact on sustainability	<ul style="list-style-type: none"> • use natural resources sustainably in tourism products and services: develop products related to nature conservation, ensure responsible animal interactions, use of nature protected areas in a sustainable manner • use natural resources innovatively and develop inclusive year-round green products and services to decrease seasonality • identify the influence of the environmental conditions on the safety of the tourists and prevent the potential risks in tourism products and services • integrate environmental sustainability with economic and social sustainability when developing green products and services
Sustainability communication	Skills in communicating about the efforts made by the enterprises towards green economy and encouraging the customers to change their behaviour	<ul style="list-style-type: none"> • understand the concept of green washing • make transparent the measures implemented by the enterprise and its goals and efforts to make a shift towards green economies and communicate these measures to the customers and other stakeholders • increase the customers' environmental awareness, encourage their engagement, and support their transition into green economy

The interviewees highlighted that environmental sustainability is most of all a mindset: how to operate in daily life and why to operate in an environmentally friendly manner. Many interviewees emphasised that sustainability and sustainable values must be integrated throughout the organisational strategies and daily operations of all the employees. It requires rethinking all small details that can have a big impact on sustainability.

The interviewees also predicted that new occupations and job profiles will emerge in environmental management as it requires specialised expertise in tourism enterprises. A restaurateur (I3) expressed that:

“Certainly, new occupations are related to environmental management... because after all, we are talking about making environmental management plans and managing entities and monitoring them, so I'm sure there will be job profiles like that in the enterprises.”

A major skillset, which emerged from the results, is improving *resource-efficiency*. This includes skills in applying circular economy principles of reducing, reusing, and recycling resources. This can involve, for example, reducing the use of raw materials, energy and water consumption as well as increasing the use of renewable energy. In fact, many enterprises are concentrating on waste management and reducing energy consumption as their environmental objectives. No materials are considered as waste and various measures are taken to save energy for cost savings. A case in point is also reusing old furniture and cutlery or recycled materials e.g., in work clothes and décor fabrics. In addition, it is essential to adopt various preventative measures and recycling practices to minimise plastic and food waste efficiently. A tourism manager (I7) said that:

“Skills in saving energy, green energy and avoiding and sorting waste are the basic green skills. At the micro-enterprise level, the basic understanding of why these are important and what are the essential things are at a pretty good level.”

Resource-efficiency is also supported by sharing and renting resources between the network of local enterprises and to their customers. Therefore, it is evident that resource-efficiency relates to value chain collaboration skills as the tourism sector is strongly interlinked with other key sectors and it includes interconnected and interdependent small-scale enterprises. Further, skills in sustainable procurement should be applied, i.e., making sure that the purchased products and services are as sustainable as possible with the lowest possible environmental impact e.g., by collaborating with local food producers. This includes procuring fresh, local ingredients, also in bulk when appropriate. A hotel manager (I6) explained their practices as follows:

“We have our own equipment rental point, we rent different types of equipment like normal bikes and scooters...but then again, we don't rent fatbikes, because there is another enterprise, which rents them. By doing cooperation with the other enterprises we share resources in the destination.”

A restaurateur (I1) presented their practices as follows:

“For example, our food waste goes to chickens and sheep on a farm next door, there is also a joint plastic point with three other enterprises to recycle plastic. Then we use old building materials and natural materials in the construction of our facilities.”

The third skillset refers to the skills related to *carbon management* i.e., skills in identifying, assessing, and preventing the impacts of enterprises on the climate change. All the choices in a tourism enterprise

should be connected to carbon management, to reducing CO₂ emissions. It was also estimated that carbon management will be a daily routine in ten years in tourism enterprises in Finland. Therefore, enterprises need to be able to recognise the sources of greenhouse gas emissions and the opportunities there exist to reduce them. This includes an ability to calculate the Carbon Footprint generated by their actions and to make plans on how to reduce and compensate for it as a tourism manager (I7) stated:

“I believe that at least a basic understanding of what constitutes a carbon footprint, how to calculate the carbon footprint of one’s own enterprise and how to reduce it is needed. These are an essential skillset.”

In addition, the sustainability of transport should be promoted from various perspectives. From the tourism organisation’s perspective, short supply chains of products should be ensured when transporting them to tourism enterprises and preferring local suppliers should be a priority. In other words, redesigning supply chains is necessary to promote the sustainability of transport. From the tourist’s perspective it is important to find environmentally friendly ways of travelling, e.g., cycling, and public transport as well as to stay longer in the chosen destination and prefer direct connections. A tourism manager (I5) expressed that:

“There are environmentally friendly ways to get around. Especially, cycling is a product of a small carbon footprint, it has been growing strongly and our goal is to attract more cyclists.”

The next skillset, *green product and service development* is also one of the major skillsets in tourism. This skillset emphasises sustainable use of natural resources in tourism products: developing products related to nature conservation (e.g., Shepherds Weeks concept by Metsähallitus Parks & Wildlife Finland), managing responsibly for animal interactions in programme services (e.g., husky and reindeer safaris, dog sledging) and utilising the protected areas in nature and designated trails in a sustainable manner (e.g., in hiking and biking tours). In addition, identifying the influence of the environmental conditions on the safety of the tourists and prevent the potential risks should be promoted. Skills are needed to develop innovative year-round products and services to decrease seasonality and tackle the challenges in business operations and employment during the low season. As nature belongs to all, it is of utmost importance to ensure that products and services are suitable for different customer groups. This means that environmental sustainability is strongly connected with economic and social sustainability as a tourist specialist (I8) working in a natural heritage site explains:

“I wish that we would somehow be able to find that responsible traveler and extend their stay and create the kind of services that would benefit those local entrepreneurs more. And yes, of course...accessibility and inclusiveness... if you look at this now, that theme is particularly important, and then surely in the future you can develop it further and think about what it could mean in practice.”

Sustainability communication is another major skillset which emerged from the results. In fact, as an integral part of the Sustainable Travel Finland Label, tourism enterprises have been recently improving their skills in sustainability communication. Skills are required to communicate and report about the measures implemented by the enterprises, their goals, and efforts to transform towards green economies. It is essential to understand the concept of green washing and absolutely avoid it. Therefore, skills are required to report and communicate sustainability transparently to give no false expectations to the customers. In addition, sustainability of operations must be communicated carefully to all subcontractors working in the value chain. This is explained by a programme service provider (I9) as follows:

“That it’s not enough that you put on the website that you have the Sustainable Travel Finland Label. It’s not enough. The sustainable way of working should be integrated into the thinking. It is a mindset, otherwise the actions do not lead anywhere. It’s greenwashing, isn’t it, what you read on the website doesn’t match the reality.”

As production and consumption are inseparable in tourism, it is equally important to change customer behaviour by increasing their environmental awareness, by encouraging and supporting them in their green engagement. As co-producers and co-creators, customers should be made aware of their consumption of resources and its environmental impacts to guide them to act in a responsible manner. For this reason, enterprises need skills in producing awareness campaigns and information materials for their customers. A café & restaurant owner (I4) highlighted that:

“Through tourism, the circular economy and resource-efficiency can be brought closer to the average consumer: the consumer travels but does not visit factories - tourism is a familiar operating environment for the consumer, in which she/he is a participant. This is why consumer awareness is important, making simple choices visible helps their engagement.”

5. Discussion and conclusions

This article theoretically and empirically contributes to the existing literature on green skills on the tourism sector. The objective of the article was to identify the relevant and up-to-date green skills necessary in the Finnish tourism sector to support its green transition. The article increases understanding of the green skills people working in the tourism sector should possess to address sustainability challenges and contribute to a more sustainable world.

In sum, the findings show that the necessary green skills in the tourism sector are the following: (1) environmental management, (2) resource-efficiency, (3) carbon management, (4) green product and service development, and (5) sustainability communication. These skills are needed to reduce the environmental impact of tourism and to improve its environmental performance.

The findings of this study emphasise that it is critical to possess green skills related to environmental management in tourism enterprises. These skills cover the management process and extend from setting environmental objectives to planning, acting, and monitoring the implementations as well as improving the performance. Environmental management has also been defined as a key skill in the previous studies (e.g., Carlisle *et al.*, 2021; Carlisle *et al.*, 2022; Ivanova *et al.*, 2021), but its’ process aspect from planning to continuously improving environmental performance has not been highlighted as such. It should also be noted that the use of digital technologies supports the management of the environmental impacts, which has previously been neglected. Therefore, the findings demonstrate that digital and green skills go hand in hand and this connection should be further emphasised in green skills development.

The findings of this study agree with those of Carlisle *et al.* (2021), Carlisle *et al.* (2022), and Ivanova *et al.* (2021) showing that the main green skillsets relate to resource management: the ability to manage energy, water, and waste. The findings also agree that green skills relate to the climate change. However, these skills are not only about the knowledge of climate change as labelled in the previous studies (e.g., Carlisle *et al.*, 2021; Carlisle *et al.*, 2022; Ivanova *et al.*, 2021). It is more about tourism enterprises efforts to set and achieve their targets to reduce CO₂ emissions as carbon management is an essential element in green economy.

In addition, the previous studies (e.g., Carlisle *et al.*, 2021; Carlisle *et al.*, 2022; Ivanova *et al.*, 2021) have considered the role of transportation in green skills and highlighted that it is important to promote sustainable transportation strategies consisting of eco-friendly forms of travel. It should be noted that sustainable transportation includes, not only the role of tourists, but also the role of supply chains as the tourism sector is strongly interlinked with other key sectors. Therefore, it is necessary to form local partnerships and networks to support the green transition of the tourism sector. In practice, green skills involve redesigning supply chains and increasing collaboration with local stakeholders, which has an impact on the sustainability of transportation as well as resource management.

The findings of this study implicate that green skills are not only about how to market and promote green activities and products. Green skills are also about making tourists aware of environmental sustainability and communicating them about the efforts of the enterprises towards it. Green skills are needed to guide, educate, and motivate tourists in engaging in sustainable behaviour. In other words, sustainability communication goes beyond traditional marketing communication, as the tourists have a significant role in the green transition. Therefore, the employees in tourism must possess skills in making enterprise's efforts transparent and increasing tourists' engagement by means of communication. In conclusion, the findings show that the role of the tourists in green skills development needs consideration.

In sum, the findings imply that green skills in the tourism sector reflect systems thinking and require a holistic approach. This means that it is crucial to examine issues from multiple perspectives. Skills are needed to encourage actions for sustainable development on the behalf of tourists, tourism enterprises, supply chains and local governments as sustainable development requires fundamental changes simultaneously at all these levels of implementation. Certainly, green skills are also interconnected with economic and social sustainability dimensions, which is why skills are required to understand these connections. It can also be concluded that knowing and understanding green transition is not enough. Green skills emphasise motivating and empowering to change the behaviour and specially to act for the transition.

The findings have important practical implications for education and training providers. They benefit from the results when planning and redesigning their curricula and course contents. When developing curricula and courses, lecturers can make informed decisions what to teach with the support of the skills profile for green skills. They are also able to define the learning outcomes related to green skills and describe the knowledge and skills participants should acquire by the end of the course. In sum, by using the results, they can deliver more specific and industry-oriented education and training, which cover the up-to-date and relevant skills to promote sustainable development and to perform everyday tasks in a sustainable way. This is essential since education and training providers should react and respond to sustainable development by integrating green skills to their curricula and course contents with relevant teaching methods. They are responsible in contributing to this transition through their curricula and educate their students a set of skills and competencies ensuring a more sustainable future. The findings confirm that, since jobs in tourism are greening, green skills are increasingly needed in many existing job profiles. The findings also show that there are emerging new jobs caused by the demand for the green economy. For example, vacancies for sustainability managers responsible for managing and overseeing environmental and sustainability issues in a tourism enterprise have started to appear and this job profile was also emphasised by the interviewees. In addition, a circular economy manager was proposed as a new job profile in the interviews.

As Carlisle *et al.* (2022) state, developing green skills require immediate attention. Therefore, tourism enterprises can utilise the results in recruiting new employees and in guaranteeing that their employees have the relevant green skillset since green skills development and training is a key GHRM intervention.

They can compare their existing job profiles with the developed green skills profile, identify the mismatches and integrate the needed green skills in their existing job profiles. Tourism enterprises should also evaluate the possibilities to increase green jobs such as the previously mentioned sustainability manager and circular economy manager. The skills profile for green skills can also be utilised to accomplish this.

First, the limitations of this study are related to the study context, i.e., one country and the current state of sustainable tourism in the country. The critical role of Visit Finland and its Sustainable Travel Finland Programme (cf. Business Finland, 2022b) guides sustainable tourism development in Finland significantly and many of the interviewed enterprises had undergone the entire programme. Nevertheless, this study increases understanding of the green skills although it only deals with Finland. Second, green skills are not separated in the study according to different level job positions. Instead, it provides an overall picture of the necessary green skills in the tourism sector. These include both management and operational level skills. In future work, it is essential to continue to examine both levels, also separately. Third, this study does not compare the existing level of skills and the future needs to explore skills gaps. These comparisons could be made in future studies. Fourth, this study concentrates on the content of the green skills. In the future, more attention should also be paid on teaching methodology: how to teach green skills. This is of utmost importance since applying knowledge to complex real-life sustainability problems and challenges needs a specific pedagogical approach.

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