Interreg CENTRAL EUROPE

Co-funded by the European Union

ICTr-CE

D.1.1.1: Overview of needs and potential digital solutions to tackle identified barriers

Version 3

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A. Preface of the deliverable

About the ICTr-CE project (Interreg Central Europe)

The potential of transnational cycling routes for tourism is still underdeveloped in central Europe. This includes the EuroVelo - 13 Iron Curtain Trail, which connects regions across Europe from the Barents Sea to the Black Sea along the European Green Belt. The ICTr-CE project improves the business case for this route by developing new tourism products. These result from a newly developed participatory business model, which strengthens the innovation capacities of local businesses.

The EuroVelo 13 cycling route, spanning an impressive 10.400 kilometers, traces the historical Iron Curtain from the Barents Sea to the Black Sea (*EuroVelo 13 - Iron Curtain Trail (ICT) - EuroVelo for Professionals*, n.d.).

D.1.1.1 Overview of needs and potential digital solutions to tackle identified barriers

The deliverable is part of Activity 1.1, which aims to review and assess the types of services operating along the ICTr (accommodations, attractions, support organizations) and their existing challenges with the use of digital distribution tools (booking systems, channel managers, etc.) based on a participatory collection of inputs from SMEs and tourism boards. The activity also studies available tools for managing integrated cycling trails to define the parameters of the ideal ICTr solution to be developed. The report will be developed following strict academic standards by UP FTS (activity lead) with the collaboration of all project partners. The report includes survey results of specific territorial needs that will be evaluated based on the tourism innovation and digital distribution literature and will uncover patterns of similarities and dissimilarities among the ICTr regions. The later version of the report will cover barriers in the pilot testing areas as well. These will thus be visited, their specifics evaluated, and the present report will be expanded based on the new findings from the onsite visit.

Activity lead: UP FTŠ, all project partners participate.

Therefore, this deliverable presents the need analysis of current and desired competences for the digital ICTr among the project's partners. Small tourism service providers often face a lack of digital marketing as well as management competence. In order to provide them with the efficient skills upgrade, a deep screening was conducted to analyse their current skill level and the level needed to equally participate in ICTr business model.

The report is based on 776 responses from an online survey questionnaire conducted among the small tourism providers and other target groups dealing with tourism in project partner countries. The online survey was carried out from mid-September 2023 until mid-January 2024. The online survey questionnaire was translated in national languages of project partners, and each one was responsible of distributing the survey on their own national level or in the regions where EuroVelo 13 - Iron Curtain Trail runs. This included the following countries: Hungary, Slovenia, Austria, Czechia, Poland, Slovakia, Croatia and Germany.

1. Methodology

An online survey questionnaire was used to collect answers or data provided by the respondents. When using a survey questionnaire method of data collection, it is important that the questions in it are unambiguous and straightforward to comprehend, as there is no one to provide clarification on question meanings to respondents like in an interview. Additionally, the structure and order of the queries in a questionnaire should be straightforward and intuitive to read (Kumar, 2011, p. 138). Online surveys have evolved significantly since the emergence of the internet and web browsers, becoming the predominant method of survey data collection. Since online surveys are essentially surveys with particular details, the standard principles of survey methodology are used (Callegaro et al., 2015, p. 4).

The open-source application for online surveys 1KA was used to design, create and carry out the implementation of the online survey. 1KA is an online service (SaaS - Software as a Service), developed by the Centre for Social Informatics, at the Faculty of Social Sciences, University of Ljubljana. In 2019, 1KA service hosted more than 10 million completed questionnaires and had a total number of over 65,000 registered users (*1KA | General Description*, n.d.).

The survey questionnaire was designed among project partners from June 2023 to August 2023. The following categories were included: general questions regarding the respondent's organization or type of business, demography, cycling tourism, management of organization/ business, digital skills and ICT and software solutions, marketing, sustainability (with the final total number of 50 questions and 236 measured variables).

The online survey was translated into the national languages of each project partner to increase the response rate, including the introduction and the cover letter. English language as a lingua franca was included as well, meaning that 8 language variants of questions and accompanying text was prepared. The online survey was carried out from mid-September 2023 until mid-January 2024 on the 1KA online survey application.

Closed questions were primarily used in the survey. This type of question predetermines the answer option in the questionnaire, and the respondent selects the category that most accurately represents their answer. The category "other" was included to deal with any responses that are not included (Kumar, 2011).

Each project partner was responsible for distribution of the survey on their national level or in the regions where EuroVelo 13 - Iron Curtain Trail runs. This included the following countries: Hungary, Slovenia, Austria, Czechia, Poland, Slovakia, Croatia and Germany. In Slovenia, the EuroVelo 13 route runs in its far north-eastern part along the border, therefore it was decided to include the respondents on the entire national territory.

The project partners distributed the link to participate in the online survey directly or by asking relevant sector stakeholders to forward it via their own contacts and communication channels. These included: national, regional and local tourism organizations or boards, destination management / marketing organizations, tourism associations, local and regions authorities, travel agencies and tour operators, business and development support organization, and most of all, the so-called small tourism providers or other SMEs and target groups dealing with tourism in project partner countries.

The following report is based on 776 valid responses (i.e. fully or partially completed questionnaires are considered as valid) and has a non-probability sample frame, since specialized target groups were invited to participate in the survey. As a result, this report is only valid for a particular group of respondents and cannot be generalized to a wider population. The sampling techniques included convenience sampling, whereas the invitation was sent to contacts in the tourism stakeholder's databases or posted on their social media. Specialized target groups from the sector were contacted directly and asked to forward to relevant stakeholders; hence, snowball or referral sampling was used as well (Sue & Ritter, 2007, p. 27–33).

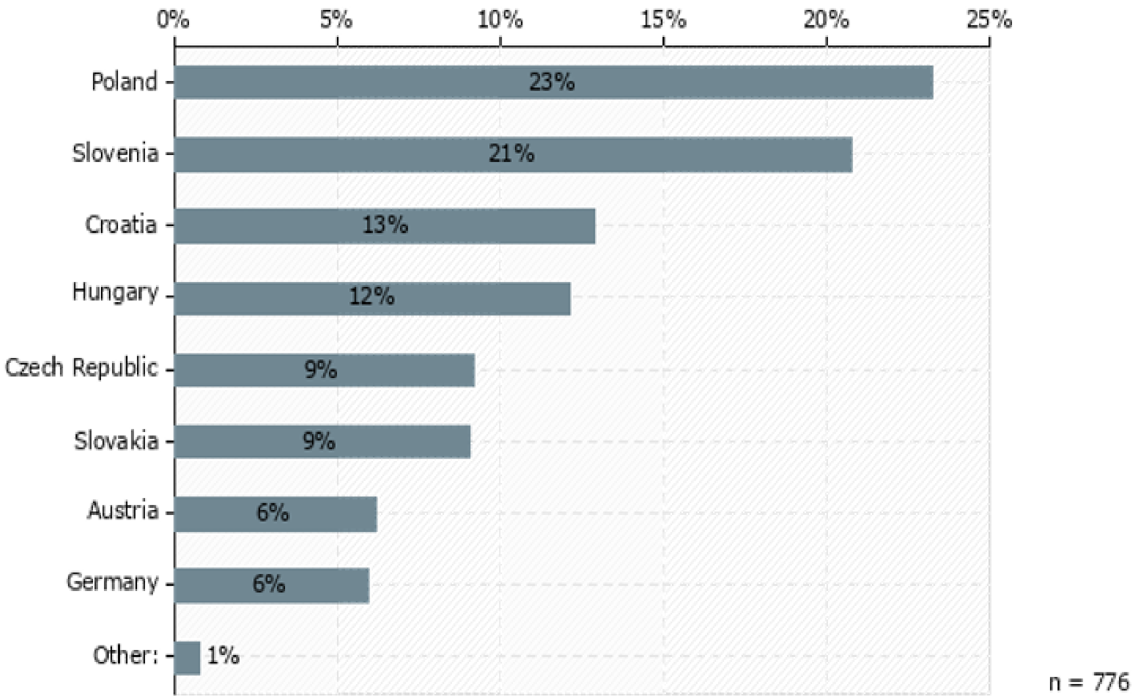
In the following chapters, the categorized results are presented using mean ratings (in brackets), in terms of an average in the data set (found by adding all numbers in the data set and then dividing by the number of values in the set), and with details about the valid answers (n) for each measured variable. Valid answers are those from surveys where the respondent filled out at least one question. In the analyses, only valid units are by default included.

B. Survey results

2.1 Respondent profiles

As of January 16, 2024, 776 valid responses have been received from the following countries: Poland (23%), Slovenia (21%), Croatia (13%), Hungary (12%), Slovakia (9%), Czech Republic (9%), Austria (6%), and Germany (6%).

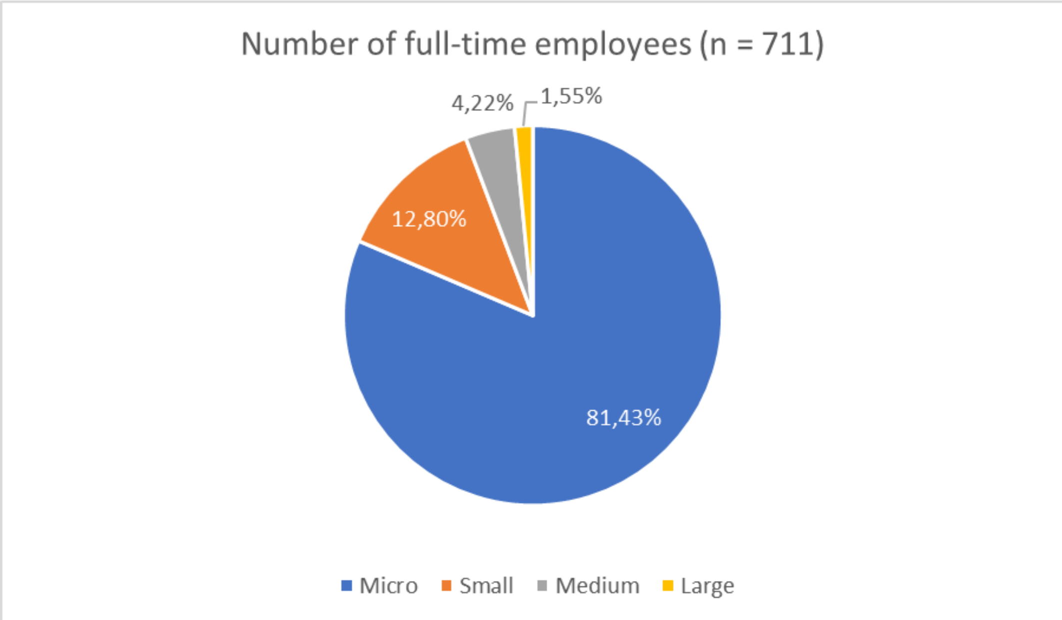
Figure 1: Location of respondent organization



According to the EU's Commission recommendation, the main factors to determine whether an enterprise is an SME are staff headcount and either turnover or balance sheet total. The survey has collected the number of employees in the organization; thus, we can deduce only partially. Small and medium-sized enterprises (SMEs) are defined as follows by the number of staff employed: micro for 10 or less staff, small for 50 or less staff, medium-sized for 250 or less staff (2003/361/EC).

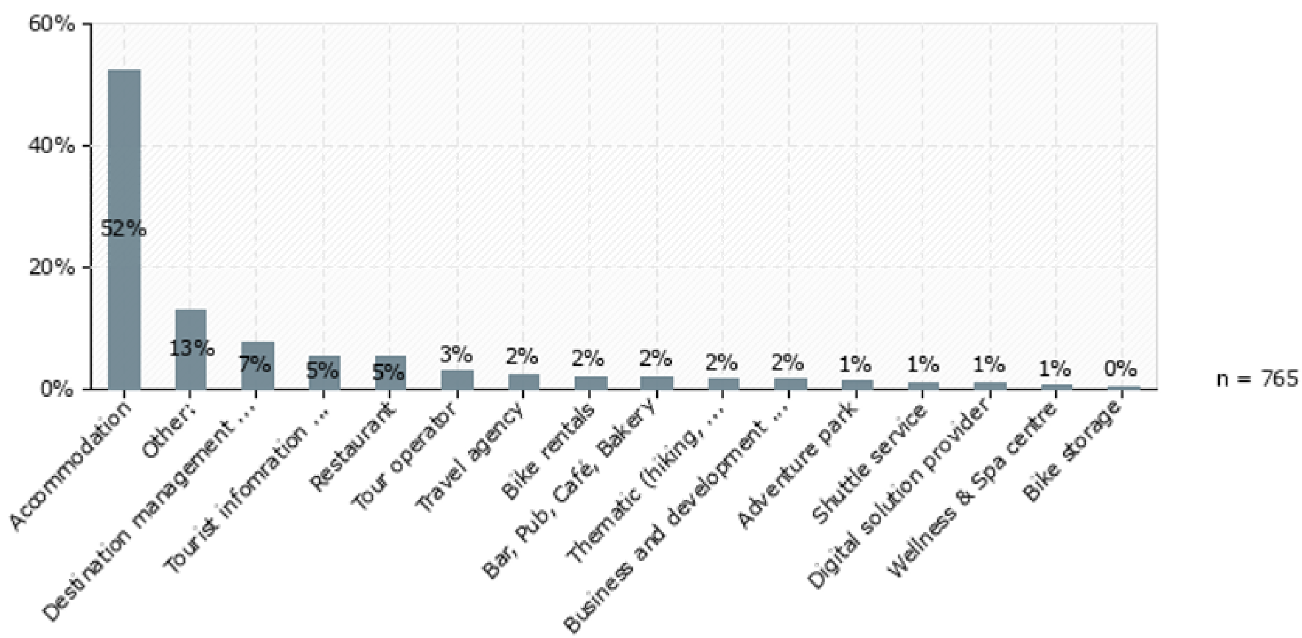
Most respondents fall into the category of microproviders (81,43%), followed by small (12,80%) and medium-sized enterprises (4,22%). Almost a quarter (24,70%) of microproviders are self-employed, as they have declared zero employees, but for the purposes of this report, self-employment is considered a micro-sized enterprise.

Figure 2: Number of full-time employees



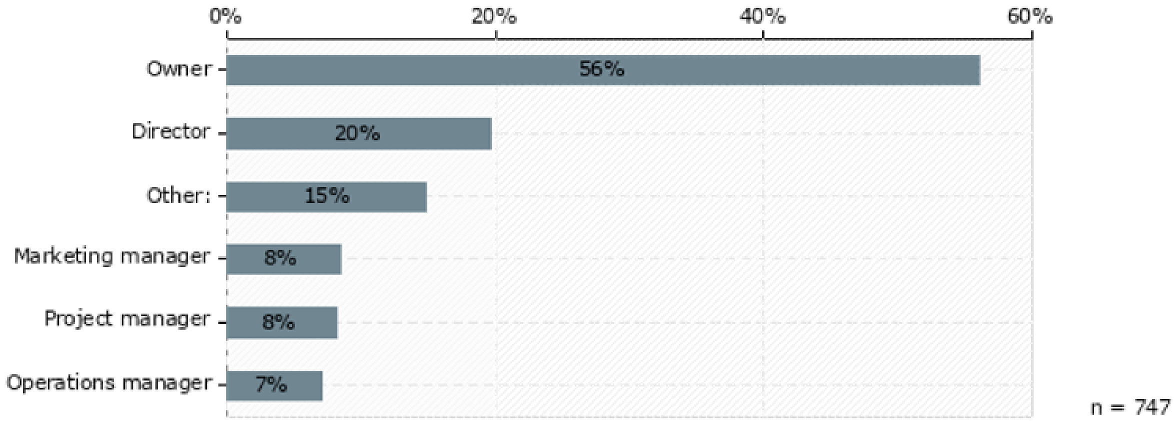
More than half (52%) of all respondents are from the accommodation sector, followed by 13% representing other uncategorized organizations in the questionnaire (e.g., farms, clubs, wine bars, museums, etc.), 7% are representatives of destination marketing organizations (DMO), 5% are from tourist information centers and restaurants. Organizations such as tour operators, travel agencies, bike shops, inns, etc., make up 3% or less of the remaining respondents.

Figure 3: Type of your business



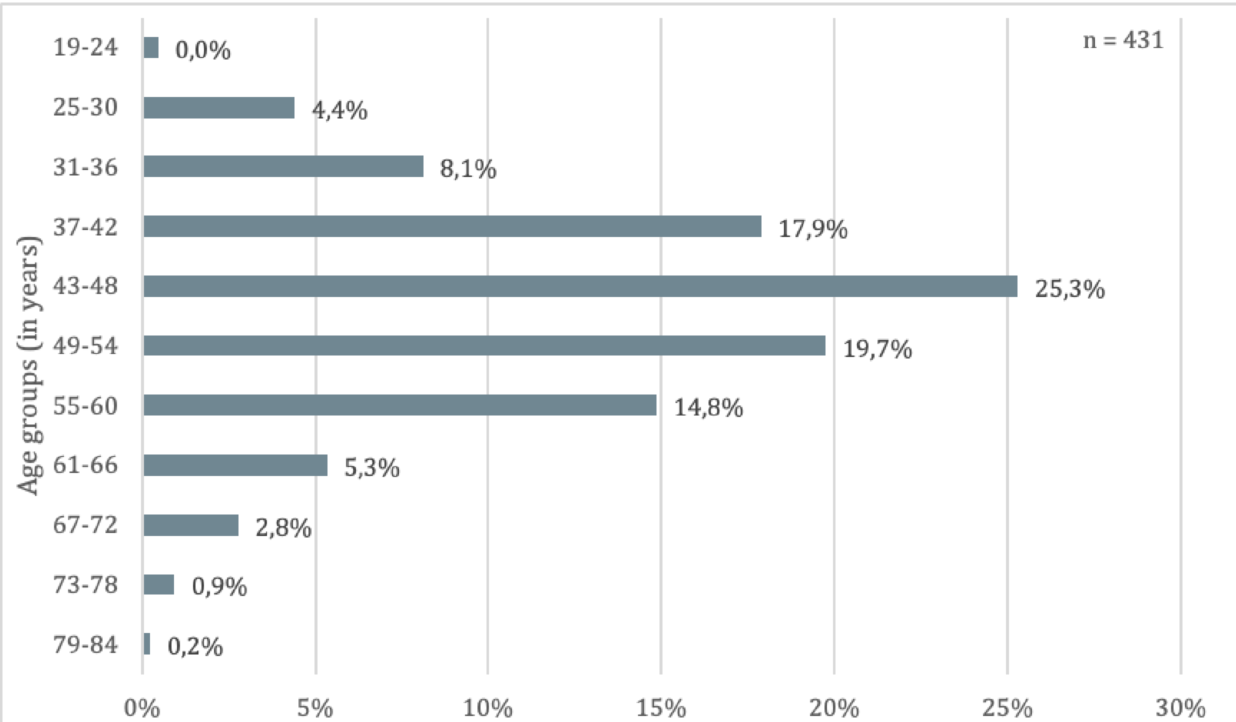
Owners constitute 56% of all respondents, followed by directors at 20%, with the remaining percentage comprising other roles.

Figure 4: Respondent's position within the organization/company



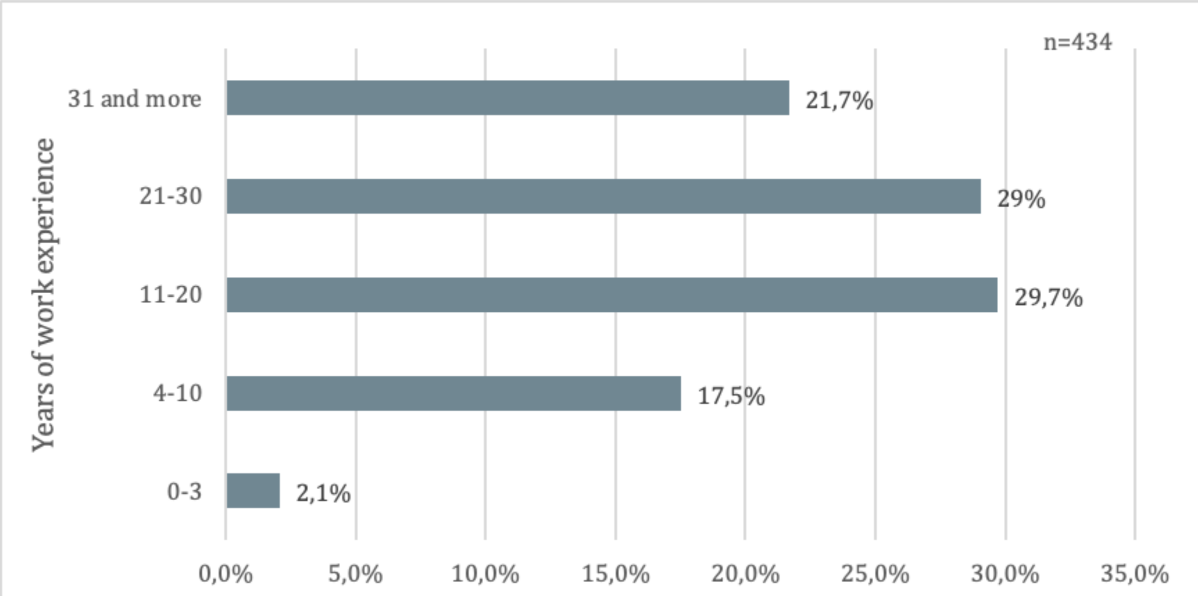
There were more male respondents (55%). A quarter (25.3%) of the respondents are between 43 and 48 years old, followed by those between 49 and 54 years of age (19.7%).

Figure 5: Age of the survey participants



Most respondents have 11-20 years of work experience (29.72%), followed closely by those with 21-30 years of experience (29.03%). More than a fifth of respondents (21.66%) have 31 years or more working experience.

Figure 6: Years of work experience of the participants



2.2 Specific needs of cycling tourism

2.2.1 The nature of cycling tourism

Cycling appeals to individuals of all ages and social standings, serving as a means to engage in physical activity. It is considered a form of soft, recreational tourism with numerous benefits, including its environmentally friendly nature, promotion of a healthy lifestyle, and cost-effectiveness as a mode of transportation. Moreover, cycling holds economic significance as a key tourist attraction, with an increasing number of domestic and international tourists favouring active holidays. The presence of natural attractions further enhances the appeal of cycling tourism, prompting tourism destinations to develop comprehensive cycling infrastructure, such as roads, forest paths, cycling points with informational facilities, and stores offering bike storage and repair services (Gantar, Kočiš, and Pehnec, 2012).

Europe emerges as a highly sought-after destination for cycling enthusiasts, influenced by trends like active holidays, "green holidays," and vacations in rural areas and beyond major cities. Countries such as the Netherlands, Denmark, Sweden, Finland, and Belgium exhibit the highest daily usage of bicycles for commuting and recreation, positioning them as prime locations for cycling tourism development.

Notably, Dutch, German, and Danish women cycle as frequently as men, and cycling rates decline only marginally with age. Meanwhile, the size and diverse landscapes of countries like Germany and Great Britain present significant potential for cycling tourism. Given Europe's geographical and cultural diversity, along with its profound cultural heritage and historical significance, the concept of establishing a network of cycling routes among member states was conceived in 1995. This initiative aimed to leverage Europe's diversity and potential fully.

Initially planned to feature 12 cycling routes between EU member states, EuroVelo has expanded significantly. As of 2018, EuroVelo spans 43 countries and comprises 17 cycling routes. By 2020, the completion of the entire network is anticipated, boasting a total length of 70,000 kilometers. The EuroVelo network caters to both cyclists exploring Europe and local residents on shorter cycling excursions. It encompasses LF-Trails, German D-Trails, and routes from the English national cycling network, utilizing existing road infrastructure to connect cycling routes and enhance accessibility (European Cyclist Federation - ECF, 2019).

Cycle tourism is a specialized form of tourism that combines the physical activity of cycling with travel and leisure. There are various definitions of cycle tourism in the literature because of the diversity and ambiguity of the cycle tourism concept (Lamont, 2009). Cycle tourism varies by plenty of factors, such as motives, types of cycling, location, duration, type of bicycle, group size, fitness level, goals, budget, support, weather, road conditions, and other factors (Andeev & Zopiatis, 2022). Dickinson and Lumsdon (2010) define cycle tourists as those whose main focus of travel is cycling and who stay overnight in a destination (using lodging facilities like hotels, hostels, camping areas, stealth camping, etc.). The authors argue that non-overnight stayers are cycle excursionists or recreational cyclists, not tourists. Similar views are expressed by Simmonsen and Jorgenson (1998).

Cycling tourism is also regarded as a sustainable form of tourism, offering economic, social, and environmental advantages for both tourists and destinations. It blends leisure with physical and mental health benefits for travelers (Rejón-Guardia, García-Sastre & Alemany-Hormaeche, 2018). According to UNWTO, cycling tourism aligns with various criteria for sustainable tourism development, including efficient utilization of environmental resources, preservation of destination authenticity and culture, socio-economic advantages, stakeholder partnerships, and high levels of visitor satisfaction. The European Parliament (2012) also endorses this perspective, classifying cycle tourism as a sustainable and environmentally friendly form of tourism (Simonsen & Jorgenson, 1998).

Moreover, the UNWTO acknowledges cycling tourism as meeting various criteria for sustainable tourism development, including the efficient utilization of environmental resources, respect for destination authenticity and culture, socio-economic benefits, fostering partnerships between stakeholders, and ensuring high levels of visitor satisfaction. Building upon this, the EU Parliament recognizes cycling tourism as a sustainable and environmentally friendly form of tourism (Simonsen & Jorgenson, 1998; Dickinson & Lumsdon, 2010). Additionally, sustainable development and transportation policies in Europe have integrated cycling routes and tourism into their plans for sustainable development. For instance, in 2020, the Commission introduced a comprehensive Strategy for sustainable and smart mobility, replacing the outdated Transport White Paper from 2011. Another relevant measure in the transportation sector is the upcoming revision of the Trans-European Network-Transport (TEN-T) Directive in 2021. Advocating for the inclusion of EuroVelo, the long-distance cycling route network, within the TEN-T network has been a long-standing effort by ECF. Consequently, numerous national and international cycling networks like EuroVelo and Sustrans have been established, not only promoting cycle tourism but also encouraging the use of bicycles as a sustainable mode of urban and rural mobility (Weston et al., 2012; Stoffelen, 2018).

Cycle tourists require several amenities. Equipment, spare parts, bicycle servicing, and secure bicycle storage are crucial. Long-term cycle tourists usually use expensive bicycles and pay more for maintenance and storage. (Rejon-Guardia et al., 2018). The literature emphasizes bicycle-friendly accommodations. (Bakogiannis et al., 2020). However, it varies from segment to segment. Some groups prefer hostels and camping. (Buning & Gibson, 2016). Cyclists, known as "nomadic cycle tourists," take long trips and change accommodations frequently. (Weed et al., 2014). Local and out-of-town day travelers prefer vacation lodging with bicycle-friendly features and services like rentals, transportation, maintenance, and support (Bakogiannis et al., 2020). In conclusion, cycle tourism destinations must offer a variety of accommodations and services to meet the needs of cycle tourists.

When developing cycling tourism and associated tourism offerings, having adequate infrastructure is crucial to attracting tourists. Despite having exceptional tourist guides and effective marketing for a particular location, achieving desired results in terms of cyclist tourist arrivals requires:

- Adequate cycling infrastructure that ensures cyclists can travel safely, and
- Accompanying services and support activities that fulfil the needs of cyclists.

2.3 The trends in cycling tourism

The European cycling tourism sector is witnessing various trends within the cycling industry that can be leveraged for promotional purposes, attracting European cyclists, and meeting their specific needs.

2.3.1 E-bikes

E-bikes represent a trend in cycling that will influence the way people cycle, choose tourist destinations and cycling routes, with whom they will cycle, in which facilities and places they will stop on their way. Cycling with electric bikes is easier, faster and allows riders to experience and see more. E-bikes also open up requests for additional cycling infrastructure, especially for the possibility of replacement or fast charging of batteries for electric bicycles, and at the same time offer the possibility of intergenerational cycling and allow cyclists of different physical fitness to cycle together.

The sale of electric bicycles in Europe is thus on the rise, where the share of electric bicycles sold is higher than the share of ordinary bicycles sold, and as a result, the share of E-bikes in the total share of all bicycles in use is increasing. In 2018, more electric bicycles were sold in the Netherlands than conventional bicycles, a total of 409,400 different E-bikes. E-bikes saw a 40% increase in sales in 2018 compared to 2017, and the average purchase price of a bike (E-bikes and regular bikes) rose to EUR 1,207 per bike (The Guardian, 2019). In Germany, 980,000 different electric bicycles were sold in 2018, which represents a growth of 36% compared to 2017. In 2019, every fourth bicycle sold in Germany is an electric bicycle. The current share of electric bicycles in Germany is 23.5%, but in the medium term it is estimated to rise to 30%, long-term estimates predict the share of E-bikes in Germany at the level of 35% of all bicycles in use (Bike Europe, 2019). In France, 338,000 electric bicycles were sold in 2018, which represents a growth of 21% compared to 2017. In France, electric bicycles represent 40% of all bicycle sales by value (Bike Europe, 2019).

Due to their driving characteristics and way of use, electric bicycles will have an impact on tourism service providers, who will have to adapt their offer to the possibilities that electric bicycles bring. At the same time, due to the advantages they have, electric bicycles will directly affect the daily behaviour of cyclists. In a survey conducted in Belgium among electric bicycle owners, as much as 90% of all journeys, both to work and after errands, are made by electric bicycle. The only exception where the use of a car is preferred over the use of electric bicycles is represented by larger purchases of everyday items or larger pieces of equipment (Astegiano, Tampère and Beckx, 2015).

The ever-increasing demand of cyclists for e-bikes and their active use will affect tourism service providers. Greater use of e-bikes for daily cycling to school and work and for daily errands and consequently greater demands for adequate infrastructure such as free parking spaces and adequate public charging stations for equipment (Astegiano et al., 2015). Electric bicycles in combination with modern navigation systems will enable cyclists to independently carry out longer cycling tours without local guides, which will affect the changed demands of e-cyclists for accompanying services. Intergenerational cycling will increase: cycling by families with children and people of different generations (as a result, the need for an accompanying offer will change, which will have to be adapted according to age, from the youngest cyclists to seniors). Increased intergenerational cycling will affect more hours that existing cyclists will devote to cycling (e.g. the whole family will be able to cycle longer distances with e-bikes instead of visiting an amusement park), and all this will affect increased demand and occupation of cycling infrastructure, which will need to be further developed and adapted to e-bikes and the age structure of e-bikers (Bike Tour, 2019).

The popularity of electric bikes (e-bikes), powered by electricity, is on the rise among cycling tourists. E-bikes allow cyclists to cover longer distances with less physical exertion, making them particularly appealing to elderly individuals. E-mountain bikes are also gaining traction, especially among those new to mountain biking. To cater to both traditional and e-bike cyclists, it is essential to organize separate tours, considering the speed difference. Offering e-bike rental services is crucial, as travellers cannot bring their e-bikes on planes. On the other hand, this rising trend may bring some potential downsides, which must be considered and monitored, e.g. potentially leading to environmental Impact, as more cyclists in sensitive areas could cause increased soil erosion and wildlife disturbance, prompting stricter regulations. Moreover, easier access to previously limited areas (mountains, remote locations) could lead to overcrowding, negatively impacting the visitor experience.

2.3.2 Growing Utilization of social media and blogs

An increasing number of cyclists draw inspiration from travel blogs dedicated to cycling. Examples include WeLeaf, a comprehensive website created by seasoned cyclists from the Netherlands and Belgium, offering travel tips, inspiration, equipment information, and more. Epic Road Rides caters to road cyclists globally, while Single Tracks provides gear tips and mountain bike trail inspiration worldwide.

Cyclists also frequently use Instagram and Facebook to share visual content, showcasing their trips through photos or videos.

2.3.3 Mobile applications

Additionally, mobile apps for navigating cycling trails, such as EuroVelo, Strava, and Komoot, are becoming indispensable. These apps offer interactive maps, route planning, and offline accessibility, addressing the challenge of limited internet connectivity in remote areas.

2.3.4 Rise of bikepacking

Bikepacking, akin to backpacking, is a growing trend in cycling tourism. Bikepackers are self-sufficient cyclists who carry their own gear, embarking on multi-day journeys exploring diverse trails. Typically employing gravel bikes suitable for various terrains, bikepackers opt for off-the-beaten-track routes to discover local experiences independently. With a minimalist approach, they shun tour guides, relying instead on travel blogs, social media, and maps for guidance and inspiration. Bikepacking.com is a popular website where bikepacking is explained, routes are described, and suitable bicycles for bikepacking are described.

2.3.5 Embracing local experiences

Cycling enthusiasts seek a deep immersion in local culture when embarking on their journeys. Rather than cycling to popular yet overcrowded sites, they prefer engaging in local customs, savouring authentic cuisine, connecting with community members, and participating in regional activities. Supporting the local community is paramount to cycling tourists, whether it involves sharing a meal in a local home, opting for homestays, or assisting local farmers.

2.3.6 Nature-Loving Cyclists

Nature-rich destinations are a significant draw for cycling tourists. Scenic routes, encompassing mountainous landscapes, lakeside vistas, and forested trails, play a pivotal role in attracting cyclists. Providing comprehensive information, complete with enticing visuals and accurate descriptions, serves to inspire cyclists and elevate the appeal of your destination.

2.3.7 Reconnecting with Nature Post-COVID-19

After the challenges of the COVID-19 pandemic, there is a heightened desire among people to reconnect with nature. Following the trend of exploring local surroundings during lockdowns, individuals now seek opportunities to immerse themselves in nature abroad, provided travel measures permit. European travelers, in particular, are increasingly drawn to remote areas, steering clear of crowded tourist spots. Cycling emerges as an ideal means to explore and commune with nature while on the move.

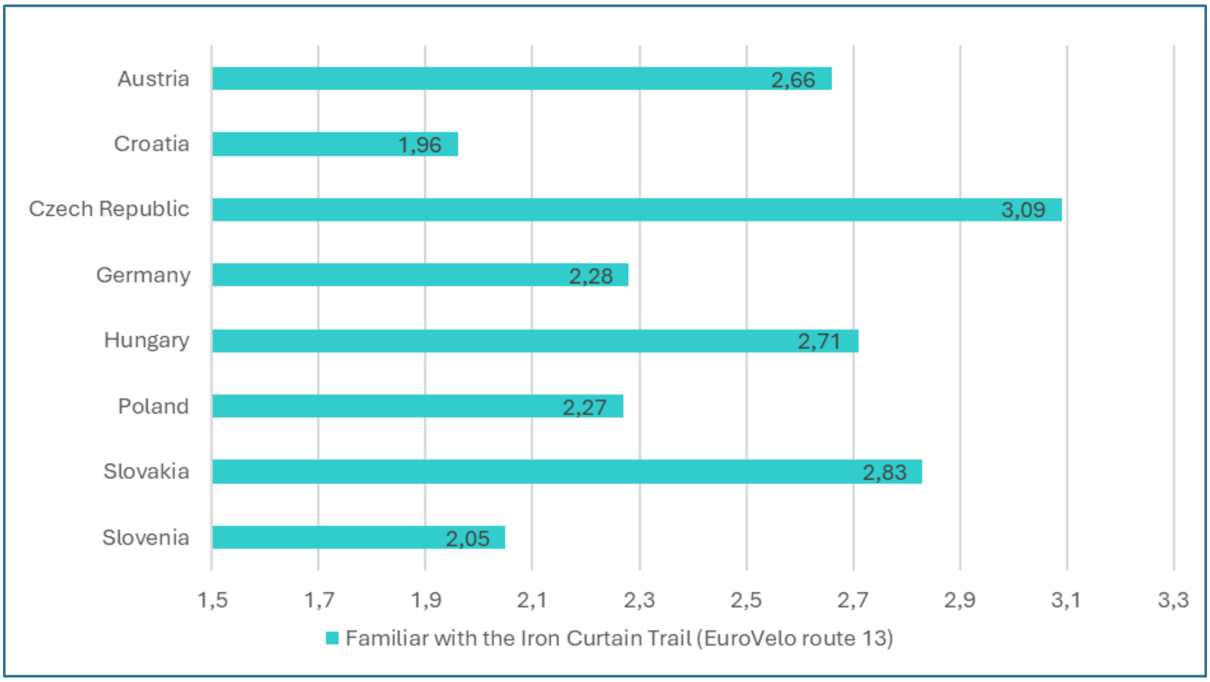
2.3.8 Incorporating and Communicating Sustainability

A considerable number of cyclists prioritize sustainability. The environmentally friendly aspect of cycling as opposed to driving is what motivates about 7% of daily cyclists who commute to work or school. To attract European cyclists, it is crucial to adopt sustainable practices and effectively communicate them to customers. Sustainability encompasses various aspects, such as offering local products, facilitating stays in sustainable accommodations, and promoting eco-friendly activities. While sustainable cycling tourism minimizes environmental impact, the concept of regenerative tourism takes it a step further by aiming to enhance and improve the destination.

2.4 Cycling tourism: survey results

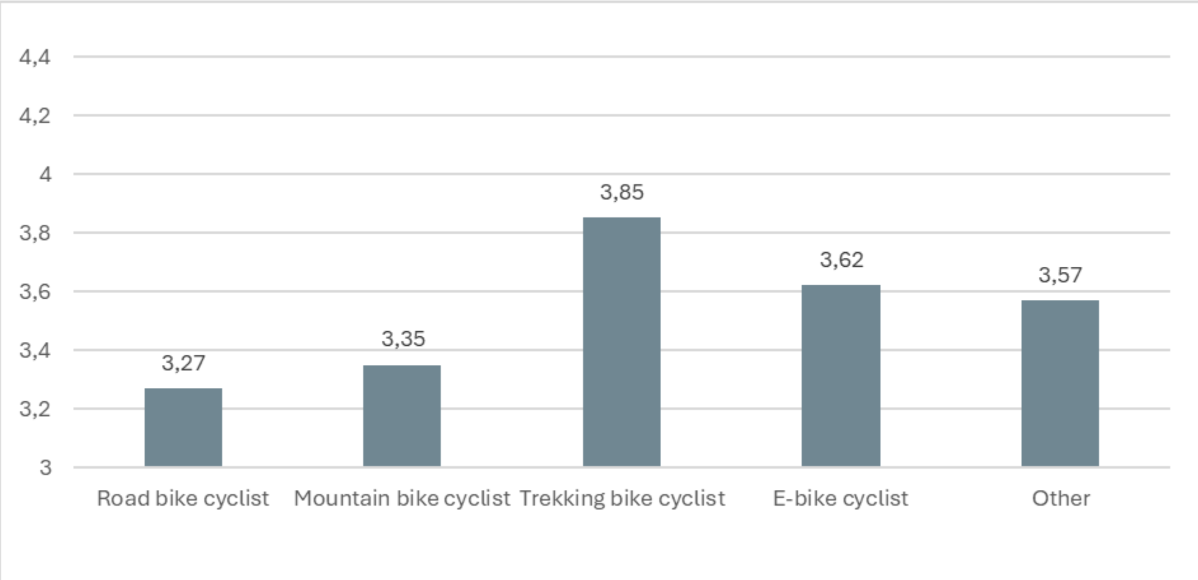
The graph in Figure 7 illustrates the current familiarity with the Iron Curtain Trail (EuroVelo route 13) among cycling tourism SMEs from partner countries. Respondents were asked to evaluate their level of familiarity with the Iron Curtain Trail (EuroVelo route 13) (n = 536; evaluate in terms of familiarity from 1 to 5, with 5 meaning the most familiar). The level of familiarity with the Iron Curtain Trail (EuroVelo route 13) is on average rated between 1.96 and 3.09 among partner countries, and it is best rated in Czechia (M 3,09) and Slovakia (M 2.83). The biggest gap between the familiarity of the Iron Curtain Trail (EuroVelo route 13) is in Czechia (M 3.09) and Croatia (M 1,96). The survey shows partner countries have rather low familiarity with the Iron Curtain Trail (EuroVelo route 13), which shows the need for more promotional activities. Notably, the current level is calling for new promotional activities and more systematic work with the cycling tourism SMEs in all the countries that participated in the survey.

Figure 7: Familiarity with the Iron Curtain Trail (EuroVelo Route 13)



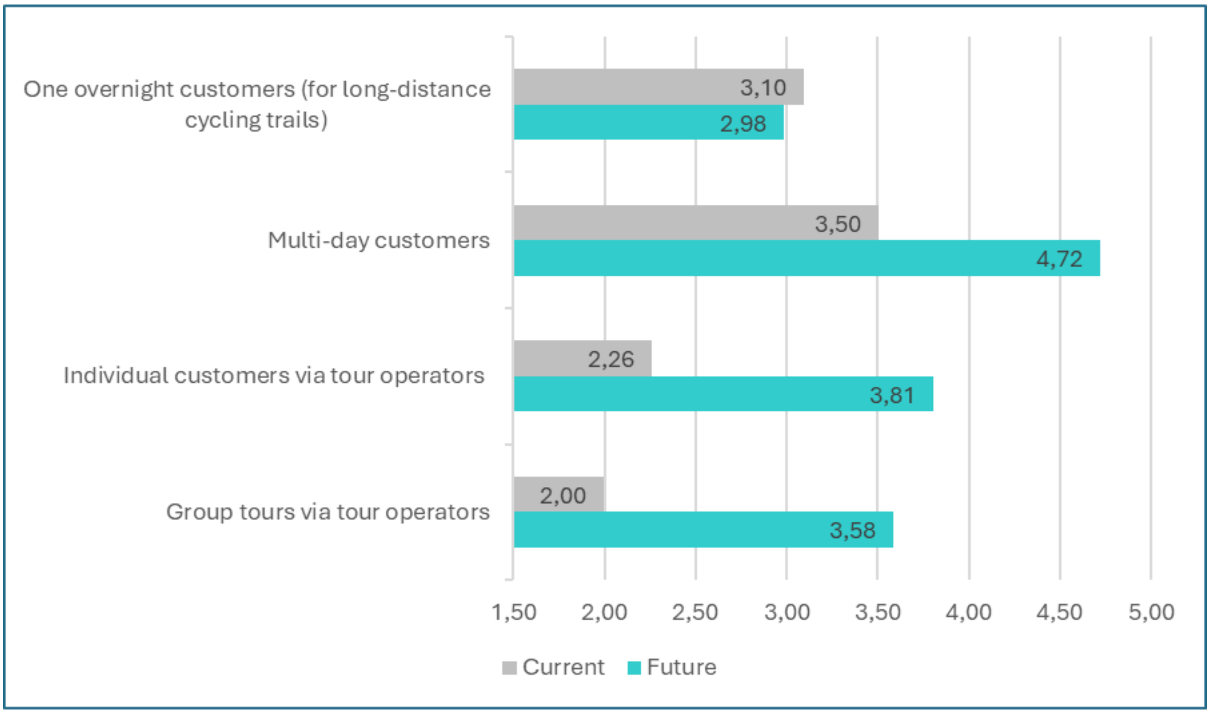
The graph in Figure 8 illustrates the types of cycling tourists important for business operations between cycling tourism SMEs from partner countries. The question in the survey about the type of cycling tourists and their importance for the business's daily operation was answered by 342 respondents (n = 342). According to the survey results, we can conclude that trekking cycling tourists are still the most important group for SMEs respondents, followed by e-bike cycling tourists (M 3,62). Surprisingly the road bike cycling tourist and mountain bike cycling tourists are less important for the cycling tourism SMEs respondents. The results are in sound with the current trends where especially e-bike cycling tourists are becoming the most important tourism group for the cycling tourism industry. The need for adequate knowledge for the cycling tourism SMEs to be able to offer the best experience for the e-bike cycling tourist is something what should be provided in the future. Knowing the characteristic and profile of e-bike cycling tourist will be a great benefit when offering the tourism packages on the Eurovelo 13 Iron Curtain routes. The results also point out that gravel cycling tourist are on the radar of the cycling tourism SMEs respondents in the survey with most of the answers in the category "Other".

Figure 8: What kind of cycling tourist are you facing? (Evaluate how important it is for your business from 1 to 5, with 5 meaning the most important)



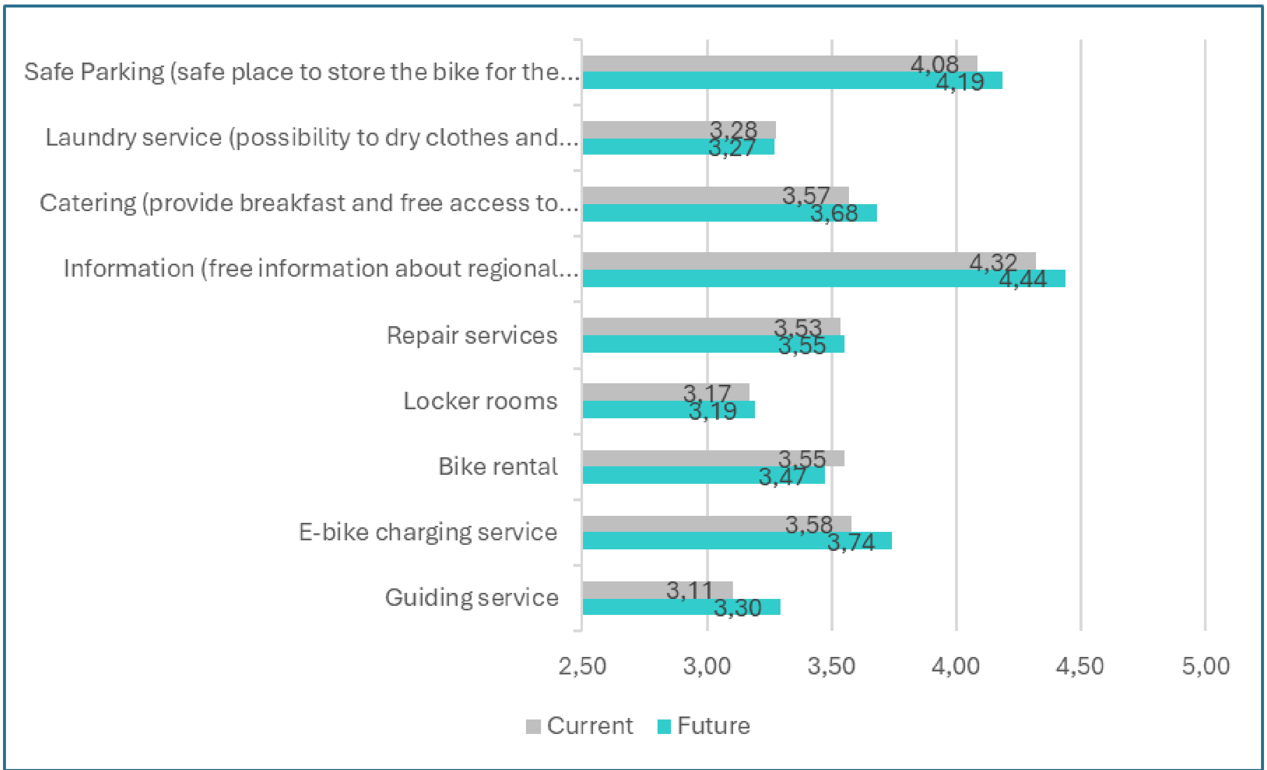
The graph in Figure 9 presents the current and future situation of the cycling customers hosted by the cycling tourism SMEs from partner countries. There were 262 respondents answering this question (n= 2629). Multiday customers and one overnight customer currently hold the highest importance for the business of cycling tourism SMEs while individual customers via tour operators and group tours via tour operators are less important for the business. In future, cycling tourism SMEs expressed the wish to host more multiday customers, individual customers, groups via tour operators, where the one-night customers are rated less important. We need to point out, that the product of the Iron Curtain Trail (EuroVelo route 13) is rather limited for the multi day individual customers since the nature of the cycling along the ICTr is connected to moving day by day along the trail. Since the results show the importance of the tour operators offering the packages for individual and group cycling tourists, there is an opportunity for more advanced cooperation between the SMEs at the selected destinations and tour operators. One of the activities in the future might be workshops and other events where tour operators meet the cycling tourism SMEs from partner countries for finding more synergies for the cycling tourists with the result of staying more days at the selected parts of the Iron Curtain trail.

Figure 9: What kind of cycling customers do you currently/future host? (Evaluate how important it is for your business from 1 to 5, with 5 meaning the most important)



The graph in Figure 10 presents the current and future situation of the specific services provided from cycling tourism SMEs from partner countries. Safe parking (M 4.08) and getting the information (M 4.32) currently hold the highest importance for the business of cycling tourism SMEs while other specific services are rated between (M 3.11 to 3.58). For the future offer, the cycling tourism SMEs expressed rather similar importance with the specific services where the means are just slightly higher than the current situation. Only the services such as laundry service and bike rental have a slightly lower mean value in comparison to current situation. To conclude there is a rather equal importance between the current and future specific services for cycling tourist offered by the cycling tourism SMEs.

Figure 10: What specific services for cyclists do you currently/future provide? (Evaluate how important it is for your business from 1 to 5, with 5 meaning the most important)



2.5 Marketing needs and trends in tourism product design

Presently, the COVID-19 recovery funds are the talk of the European Union. Their objective is to strengthen the resilience of small and medium-sized enterprises (SMEs) in the face of potential crises. We anticipate that this trend will continue over the next five years and that developing green and digital entrepreneurial skills will be of particular importance. As a result, we believe that areas along the ICTr, will also be able to benefit from this package and must be prepared to serve as a pilot testing area for the transfer of EU knowledge in order to achieve the best possible results. The area is ideally situated to benefit from such EU-level project initiatives. Consequently, we are of the opinion that future tourism development initiatives pertaining to SMEs should be strategically guided in this direction.

Strategic and targeted application of technologies to achieve marketing and economic objectives. Every facet of our existence is driven by technology, and any type of entrepreneurial tourism endeavour that is not managed with the aid of effective technological solutions will be at a substantial strategic disadvantage. Hospitality, tourism, and travel are inextricably linked to technology. Tourists reserve lodging and flights via technology, utilize technology to travel to their destinations, employ technology to explore those destinations, and utilize technology to share their experiences online.

Although certain technologies become accessible only at a substantial expense, a considerable number of functional solutions are also available for free or at a nominal cost, making them accessible to the majority of small and medium-sized enterprises (SMEs). Slow adoption rates of some technologies continue to be an issue, particularly among the current generation of SME owners who were not raised digitally. Therefore, younger generations must become more engaged and assist older generations in transitioning to digitalizing their daily operations, particularly social media.

A recent survey carried out as part of the Smarter AoE project, in which some of our PPs also participated, among the participating SMEs gained the following insights:

- SME respondents desire to improve their social media skills;
- SME respondents desire to improve their online marketing and communication skills; and
- SME respondents desire to improve their e-mail marketing skills.

Although the emphasis on honing social media abilities is to be expected given the platforms' widespread usage, the tourism industry also possesses its own set of social media that possess a more substantial capacity for generating revenue than the social media platforms we employ in our daily lives. These are crucial during the stage of envisioning oneself travelling, but they become obsolete once the prospective traveller transitions into the phase of organizing their trip. Potential tourists perceive SMEs as active and dependable providers of tourism information through the use of the most widely used digital intermediaries (Tripadvisor, Google Maps, Google Hotel Search, Booking.com, etc.). During this phase, they conduct an immediate search for trustworthy information. An examination of Tripadvisor, which continues to be the most frequented website by tourists when organizing their journeys, for an area along the ICTr in Austria, reveals a variety of bookable activity categories for visitors to partake in while in the region. The situation is unfortunately not the same for the areas in Slovenia, Croatia, Czechia and Hungary which are only a few KM away.

After becoming acquainted with the primary attractions and offerings of the destination, the tourist can broaden his perspective to include the activities that most pique his interest. Technology like digital maps on smartphones or cycling computers allows cyclists to easily identify these points of interest on a map, along with their distance from the current location. For instance, if a cyclist desires a delectable meal at a restaurant, they can enlarge the restaurant's view on the map. These restaurants will be ranked and displayed based on the opinions of previous guests, making it easy to find highly-rated establishments. Therefore, restaurant SME opportunities that provide excellent quality and value for money are tremendous.

Nevertheless, despite efforts, less developed and minor destinations continue to face challenges in educating and empowering their tourism providers to register and create listings on Tripadvisor (which are free of charge for the most basic features).

The less favourable circumstances are exacerbated by the scarcity of information pertaining to culinary offerings. The limited number of reviews collected by the few listed restaurants is of a moderate nature, indicating that the implementation of a systematic reputation management practice—in which the owner/manager of a small or medium-sized enterprise actively encourages patrons to share their experiences at the establishment—has not yet become a customary marketing and quality management approach for restaurants dispersed throughout the countryside along the ICtr. This is deemed essential for the future sustainable development of gastronomy in the ICTr region, given the area's enormous potential (although a cursory examination of Tripadvisor would dissuade most food tourists).

Present studies in the intersection of technology and tourism are particularly focused on the development of intelligent solutions utilising cutting-edge technologies like the Internet of Things, sensors, interconnected devices, and data platforms. However, we contend that it is critical for ICTr areas to prioritize narrowing the gap between their tourism small and medium-sized enterprises (SMEs) and infomediaries, such as Tripadvisor, through the effective utilization of travel intermediaries. This must be achieved before embarking on more ambitious digitalisation endeavours.

The economic impact is the issue associated with the technology that requires close monitoring. concerning its economic dimensions. They are crucial because small and medium-sized enterprises (SMEs) will not invest in particular technological solutions if they fail to perceive economic benefits from their implementation (Ivanov & Webster, 2019). While tourists may prefer a particular technology, it is the responsibility of the tourism SME to determine and fund its development to provide it to them. Therefore, owners and managers of tourism SMEs must be convinced that investing in this technology is worthwhile. For example, a hotelier must ensure that the economic advantages derived from the in-room tablets surpass the expenses associated with their installation, insurance, and maintenance. These advantages may include increased room service sales and time savings for employees who provide information that hotel guests can access via the tablet. It is illogical for the hotel to provide this technological advancement, notwithstanding its aesthetic appeal, if the expenses are excessive. In addition, the adoption of technological advancements by a SMEs in the tourism sector can potentially yield substantial effects on its market standing, customer engagement, profitability, efficiency, productivity, and competitiveness (Ivanov, 2019). As stated previously, the marketing component is crucial to our vision, and small and medium-sized enterprises (SMEs) must recognize that social media management alone will not increase their competitiveness. It is necessary to educate SMBs methodically on contemporary digital marketing strategies and the intermediaries they must actively manage. In addition, as a result of widespread staff shortages in the sector across Europe, ICTr areas will be compelled to adopt technological advancements to increase operational efficiency and reduce reliance on manual labour in the coming years.

As societal consciousness regarding resource conservation grows, so too do tourists' discernment and sensitivity regarding the selection of products and activities that support the upkeep of the destinations they visit and the communities that serve as hosts. The pristine, agriculturally fertile natural environment along the ICTr, combined with the region's rich cultural heritage, provides every amenity required to create sustainable tourism products. This form of tourism product, which is still considered niche in our region, is already gaining popularity in economically developed regions of Western and Northern Europe. Millennials, in particular, are becoming the focus of every tourism marketer and exhibit a comparatively high fascination with products that are designed with sustainable principles in mind. Some are even attempting to participate in so-called regenerative tourism activities.

Slovenia, which lacks major attractions such as kilometres of beaches or the Eiffel Tower but possesses a countryside that is similarly diverse and abundant as that can be found along the ICTr, recognized the potential of these types of tourism in 2010 and began systematically developing them.

The Slovenian tourism board released the initial guidelines for the creation of sustainable tourism products, also referred to as "green" products, in 2016. These guidelines can be a valuable reference for the establishment of similar offerings throughout the ICTr.

The sustainable tourism product guidelines of Slovenia are encapsulated in the following five points, which are of the utmost importance when creating environmentally friendly products:

1. While not required, it is advisable that the green tourism offering capitalizes on the environmentally conscious nature of the location. Thus, the green product will be more readily identifiable, as its positioning and promise will align with the overarching green narrative, and the destination will be acknowledged on account of the green product's credibility.
2. The environmentally friendly product ought to possess a distinct and unambiguous motif or exhibit exceptional quality in at least one respect. For instance, it ought to be associated with gastronomy, environmentally sustainable transportation, cultural heritage, and natural value, or it ought to be founded upon exemplary socially responsible practices, brief local supply chains, and so forth. It will achieve visibility more efficiently and promptly as a result.
3. When considering an integrated tourism product that connects multiple components and providers, it is advisable to ensure that a significant number of the offerings/providers are environmentally certified, have established mechanisms to assess and mitigate environmental impacts, or are implementing the social component of sustainable development.
4. The product must adhere to the operational principles outlined in the Slovenian Tourism Green Policy. Additionally, the provider's endorsement of the UNWTO Global Code of Ethics for Tourism is preferred or suggested, although not mandatory.
5. While the Green Product functions independently, it is advisable to incorporate it into the broader environmental narrative of the provider or destination.

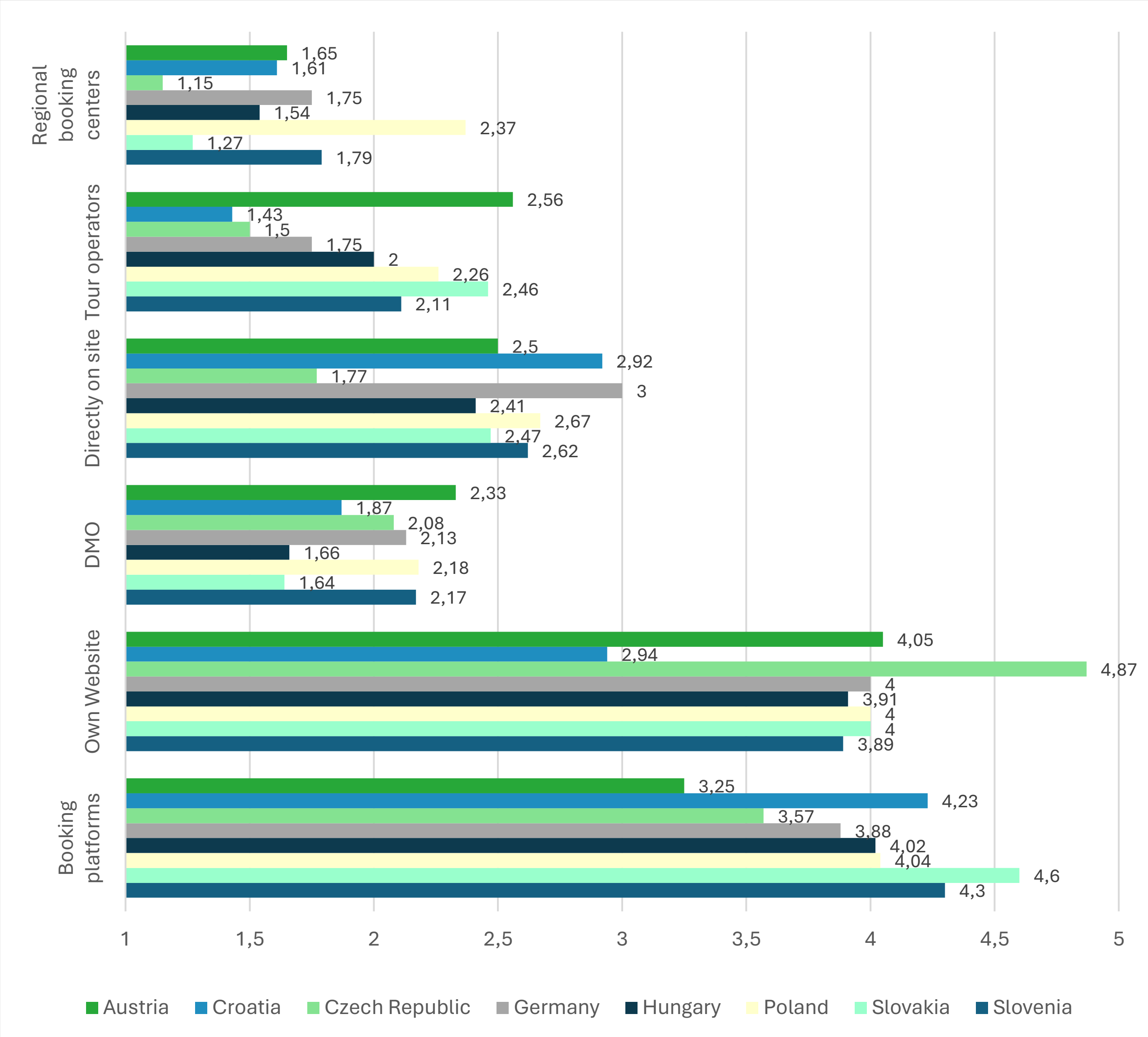
We are confident that ICTr to emerge as the foremost centre for sustainable tourism development in Europe. By actively participating in EU-funded territorial cooperation projects, the area can provide its small and medium-sized enterprises (SMEs) with a competitive edge and access to financing opportunities.

2.6 Marketing needs and trends: survey results

The graph in Figure 11 illustrates the importance of different booking channels among cycling tourism SMEs from partner countries. It highlights that the SMEs' own websites and booking platforms are the foremost sources of bookings.

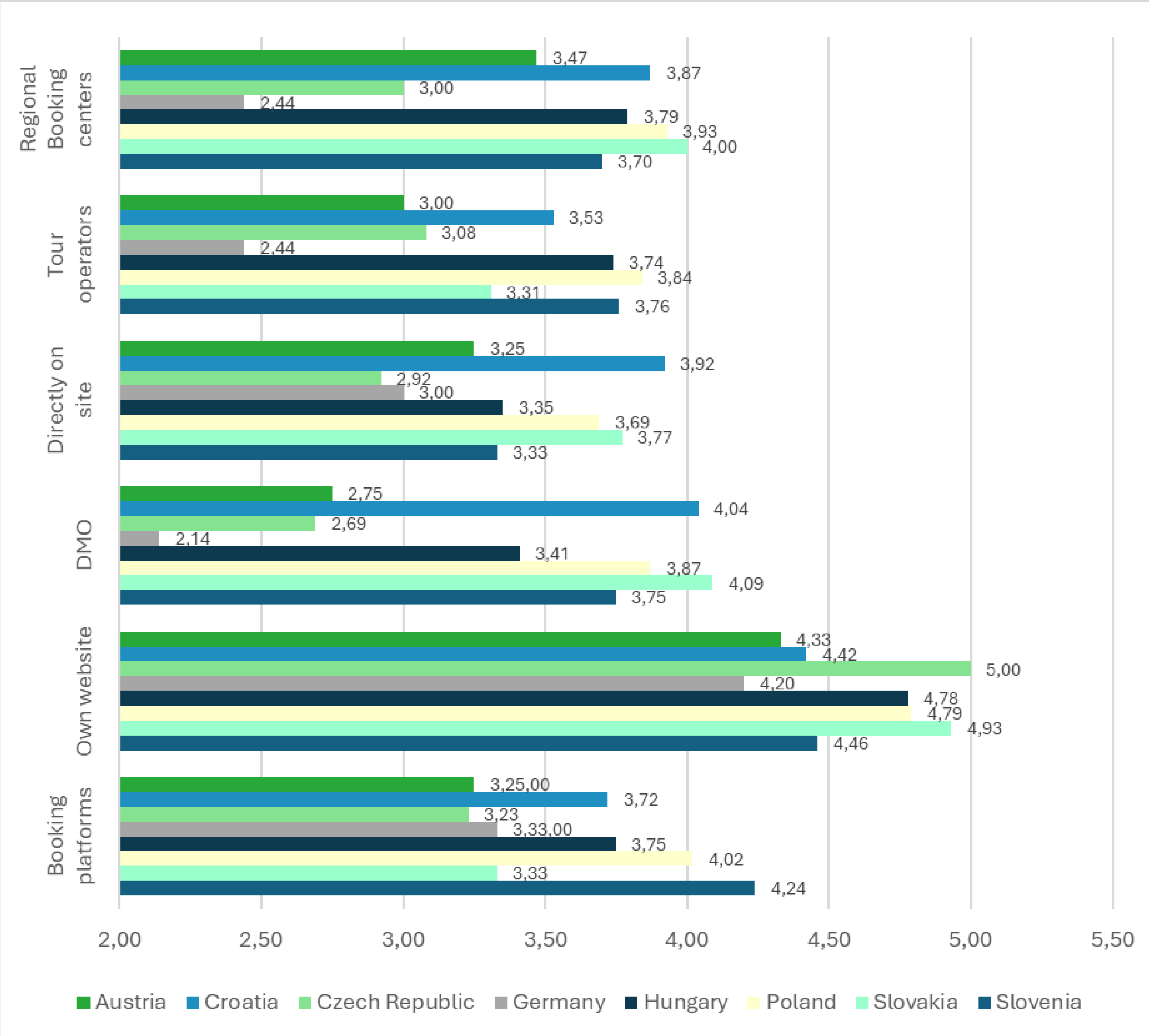
Croatia is the least likely to use this channel, with Czechia leading the way in using its own website bookings at comparable frequencies. Booking platforms hold particular importance for Slovakia, Croatia, Slovenia, followed by others. Although regional booking centres, tour operators, and DMOs are generally less critical for booking generation, Poland, Austria, and Slovakia emerge as exceptions, indicating a significant reliance on these channels. Bookings made directly on-site are considered of moderate importance, with Germany and Croatia being particularly notable in this category.

Figure 11: The importance of different booking channels among cycling tourism SMEs from partners countries



The graph in Figure 12 displays the anticipated future importance of different booking channels for cycling tourism SMEs from different partner countries. Own websites are anticipated to be the most critical channel, with the highest importance ratings coming from Czechia followed closely by Slovakia, Poland, and Hungary. This indicates a trend towards less intermediary-dependent booking methods. DMOs and tour operators are perceived as the least important booking channel overall in the future. Despite this, DMOs are rated higher by Slovakia and Croatia suggesting a distinct strategic focus on DMOs in this country compared to others. The country that stands out in the analysis is Germany, with the lowest overall importance scores assigned to most of the channels.

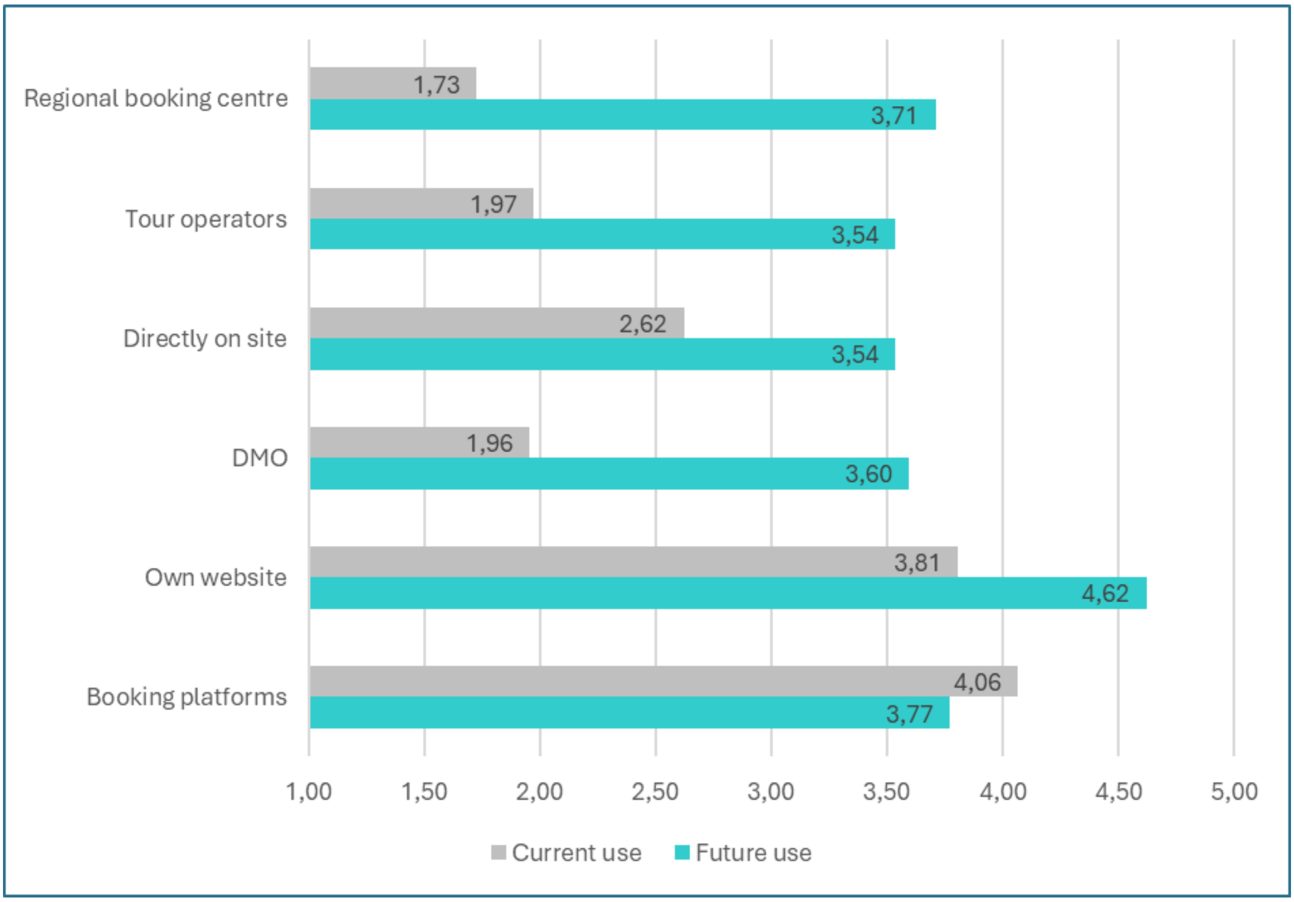
Figure 12: The anticipated future importance of different booking channels among cycling tourism SMEs from partners countries



The graph in Figure 13 reveals both the current and anticipated future importance of various booking channels for cycling tourism SMEs across partner countries. While all channels are expected to grow in significance, the most striking increase is projected for regional booking centres. This trend suggests a potential shift towards more localized booking methods, aligning with the project's objective of developing bookable offers specifically for these centres (which are based on a participatory business models). Notably, the data also suggests an existing interest among SMEs to participate, as they anticipate the future importance of regional booking centres to be significantly higher than their current role.

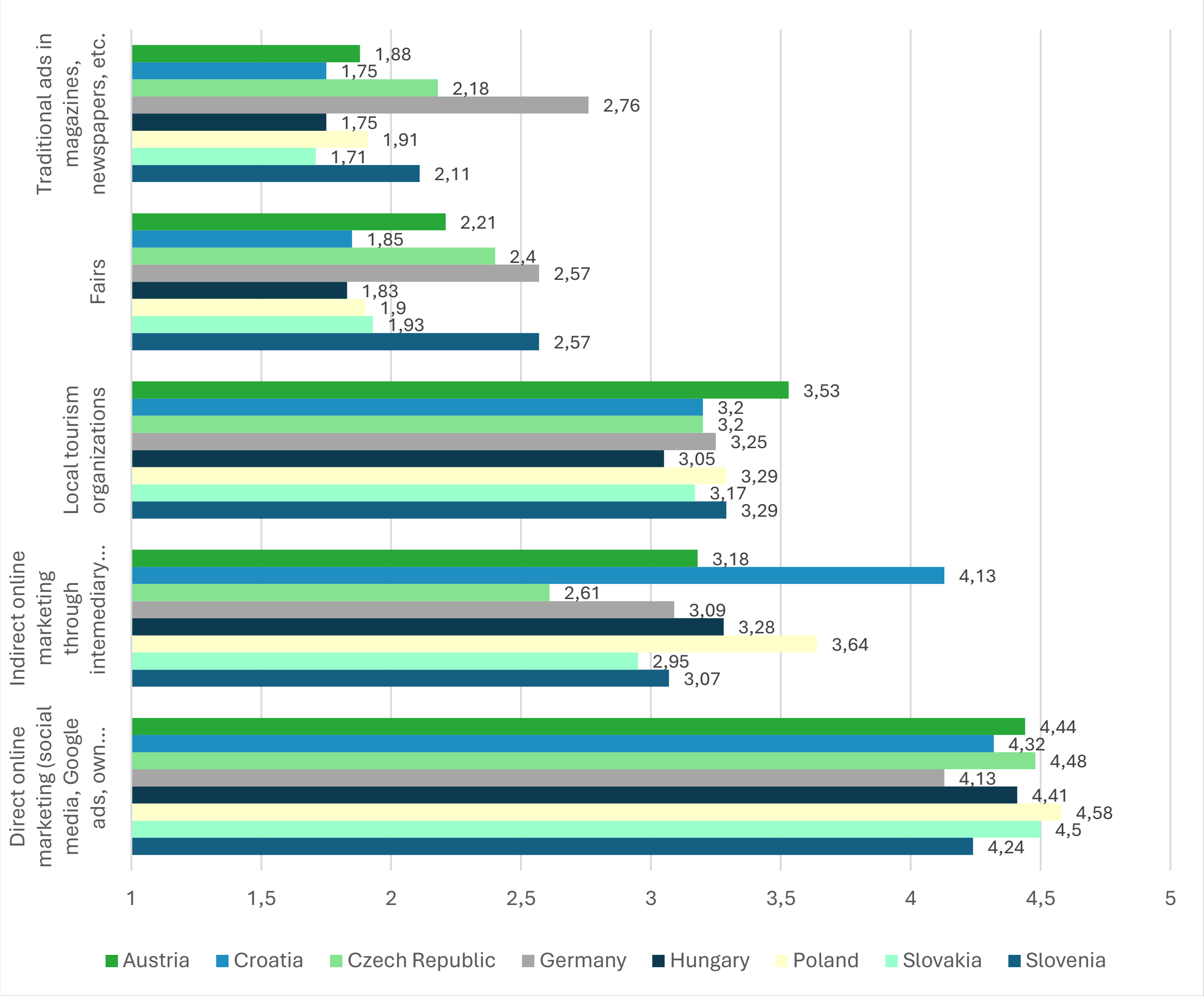
Bookings made directly on-site, DMOs and those facilitated by tour operators are also projected to see a notable increase in importance. Own websites and booking platforms are currently and will continue to be, the most critical channels for the company's bookings.

Figure 13: The current and anticipated future importance of different booking channels among cycling tourism SMEs from partner countries



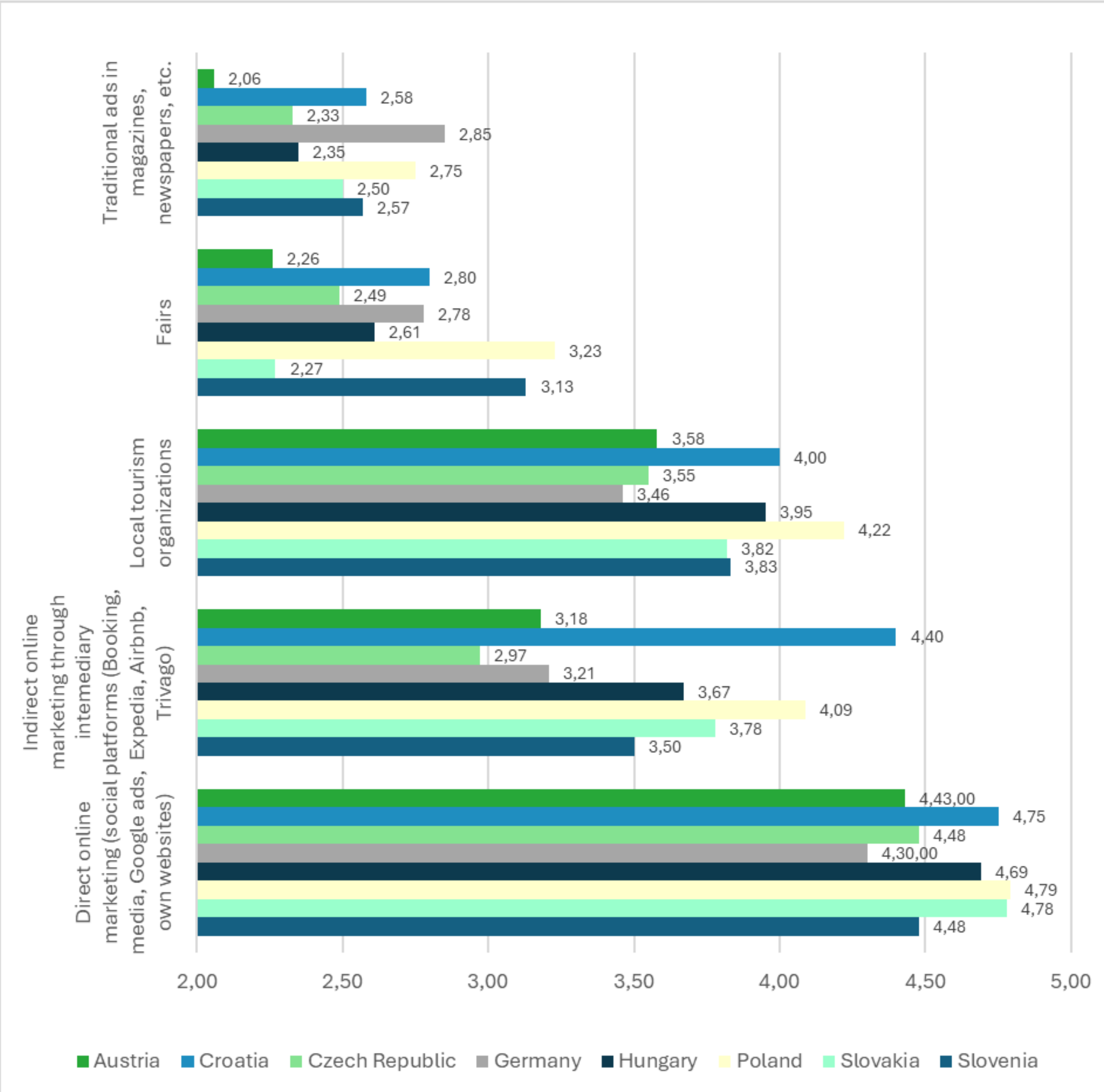
The graph in Figure 14 illustrates current promotional channels used among cycling tourism SMEs from partners countries. Direct online marketing strategy appeared to be the most widely used among all partner countries, with Poland achieving the highest score in its usage. Promotion via local tourism organization and indirect marketing though intermediary platforms occupy an intermediate position with Croatia and Poland notably valuing indirect marketing through intermediary platforms more highly. Traditional advertising in magazines, newspapers, and participation in fairs rank as the least popular and utilized marketing strategies. However, it should be noted that certain countries, specifically Germany and Slovenia, distinguish themselves by more frequently using these less popular strategies.

Figure 14: Current promotional channels used among cycling tourism SMEs from partners countries



The graph in Figure 15 portrays the anticipated future importance of promotional strategies (channels) among cycling tourism SMEs from partner countries. Direct online marketing is anticipated to be the most critical promotional strategy for SMEs, with Poland, Slovakia, and Croatia projecting the highest reliance on it. Meanwhile, promotion through indirect marketing via intermediary platforms and local tourism organizations is also predicted to be highly important, with Croatia and Poland particularly emphasizing these strategies. Traditional advertising in magazines and newspapers, as well as participation in fairs, are projected to be the least important marketing strategies in the future.

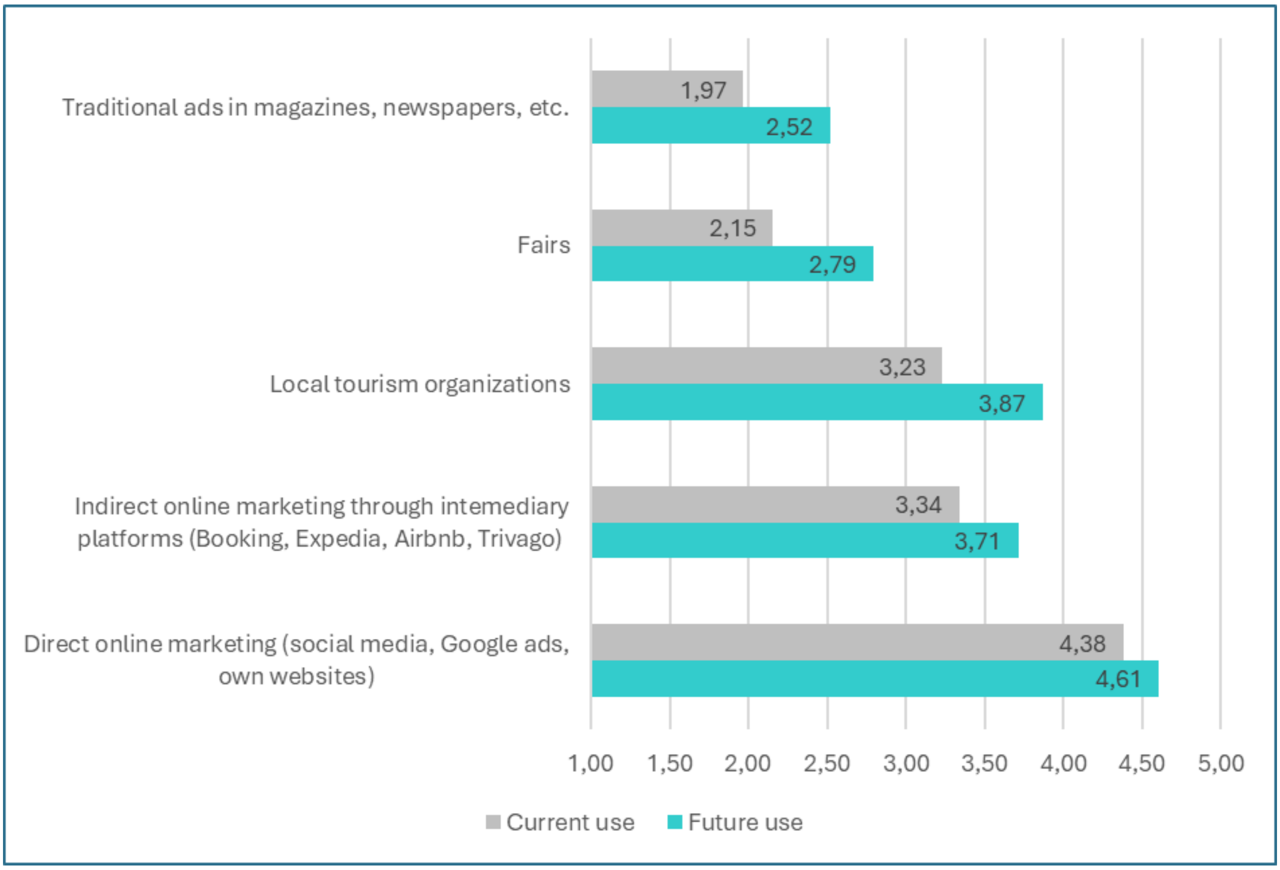
Figure 15: The anticipated future importance of promotional channels among cycling tourism SMEs from partners countries



The graph in Figure 16 presents the current and future importance of promotional channels among cycling tourism SMEs from partners countries. Direct and indirect marketing channels currently hold the highest importance and are anticipated to increase further in significance.

Traditional channels are expected to see marginal growth but will continue to be less critical promotional tactics. Moreover, local tourism organizations are projected to take on a more pivotal role in SMEs' marketing strategies.

Figure 16: The present and future importance of promotional channels among cycling tourism SMEs from partners countries



2.7 Business management needs and entrepreneurial skills

2.7.1 Characteristics of Rural Environment

Numerous rural communities along the EuroVelo 13 cycling route have access to micro-local tourism and cycling services, which enhances each one. These entrepreneurs are pivotal in crafting unique cycling experiences, thereby playing a crucial role in attracting and serving diverse types of cycling tourists. In this context, an analysis of the entrepreneurial landscape, strategic orientations, and competencies of these type of tourism stakeholders is vital. Such an analysis can effectively identify and bridge developmental gaps, enhancing the overall cycling experience.

According to *EUR-Lex - L* (2003) a microenterprise is defined as an enterprise which employs fewer than 10 people and whose annual turnover and/or annual balance sheet total does not exceed EUR 2 million.

Rural tourism, as defined by UNWTO (n.d.), refers to a tourism activity where visitors engage with various offerings primarily associated with nature, agricultural practices, rural life and culture, fishing, and exploring the surroundings. These activities take place in rural areas, which stand out for their low population density, heavily shaped landscapes by agricultural and forestry activities, and traditional social fabric and way of life.

Numerous studies underscore the distinct challenges faced by rural micro-entrepreneurs as compared to their urban counterparts. These challenges include geographical remoteness, brain drain, inferior infrastructure (like limited internet access), scarcity of skilled labour, financial constraints, a weak entrepreneurial support environment, lower levels of education, and fewer opportunities for serendipitous interactions that foster creativity and innovation. Such factors contribute to a lack of entrepreneurial drive, competitive disadvantages, and a less stimulating environment for innovation (Cunha, C. et al., 2018; Lyons et al., 2019; Roundy et al., 2018). Jardim (2021) explored how rural entrepreneurship diverges from traditional entrepreneurship, both as a scientific field and as a practical application. He asserts that the conditions of rural entrepreneurship cannot be equated with mainstream and traditional microeconomic approaches to growth and rapid innovation due to significant differences arising from the aforementioned factors. Other researchers also note a shift in entrepreneurship studies, focusing now on the concept of entrepreneurial ecosystems (EEs). This concept suggests that each ecosystem is unique to its geographical boundaries, influencing the opportunities available to entrepreneurs and the distinctive entrepreneurial spirit of various societies (Roundy et al., 2018).

When Jardim (2021) discusses lifestyle entrepreneurs frequently found in rural landscapes, she questions whether profit is truly the primary motivational factor. Marcketti et al. (2009) argue that lifestyle entrepreneurs establish and manage businesses primarily aligned with their personal values, beliefs, interests, and passions, not necessarily pursuing profits and material wealth.

Such entrepreneurial lifestyles (mindsets) coupled with rural-specific conditions previously outlined often (but not always) manifest in inadequate qualifications, limited managerial experience, and a lack of other professional skills, which can be associated with business inefficiency. On the other hand, there are lifestyle entrepreneurs with rich prior experiences transferable to tourism, enabling them to develop more effective and sustainable management practices. These entrepreneurs are typically more open to internal and external partnerships and innovative approaches (e.g., integrating or connecting local food/products into their offerings) (Cunha et al., 2020).

Assuming that an entrepreneur's success is not solely dependent on personal characteristics but on the knowledge and skills acquired throughout their career, Lyons et al. (2019) developed the Readiness

Inventory for Successful Entrepreneurship (RISE) based on previous research and various theories. RISE, comprising 30 individual skills categorized into four main dimensions – transformation management, relationship management, business management, and organizational process management – is designed as an additional tool for university educational programs. It often targets rural entrepreneurs, addressing the lack of entrepreneurial coaches and other business support services in these areas.

Figure 17: RISE management domains

Domain	Individual Skills
Business management skills	1. Knowledge of field/industry
	2. Knowledge of laws/regulations
	3. Accounting/bookkeeping
	4. Finance
	5. Marketing/communication
	6. Operations management
	7. Technology-enabled business management
Relationship Management skills	8. Networking capacity
	9. Leveraging existing partnerships
	10. Resource leveraging
	11. Building and maintaining reputation
	12. Community involvement and influence
	13. Accountability
	14. Teaming
Organizational process management	15. Internal communication
	16. Process design
	17. Decision making
	18. Conflict management
	19. Performance and disciplined action
Transformational management skills	20. Problem solving
	21. Persistence/relentlessness
	22. Passion/charisma
	23. Flexibility and adaptation
	24. Knowledge as a resource
	25. Creativity
	26. Innovation
	27. Leadership
	28. Resilience
	29. Resourcefulness
	30. Self-awareness

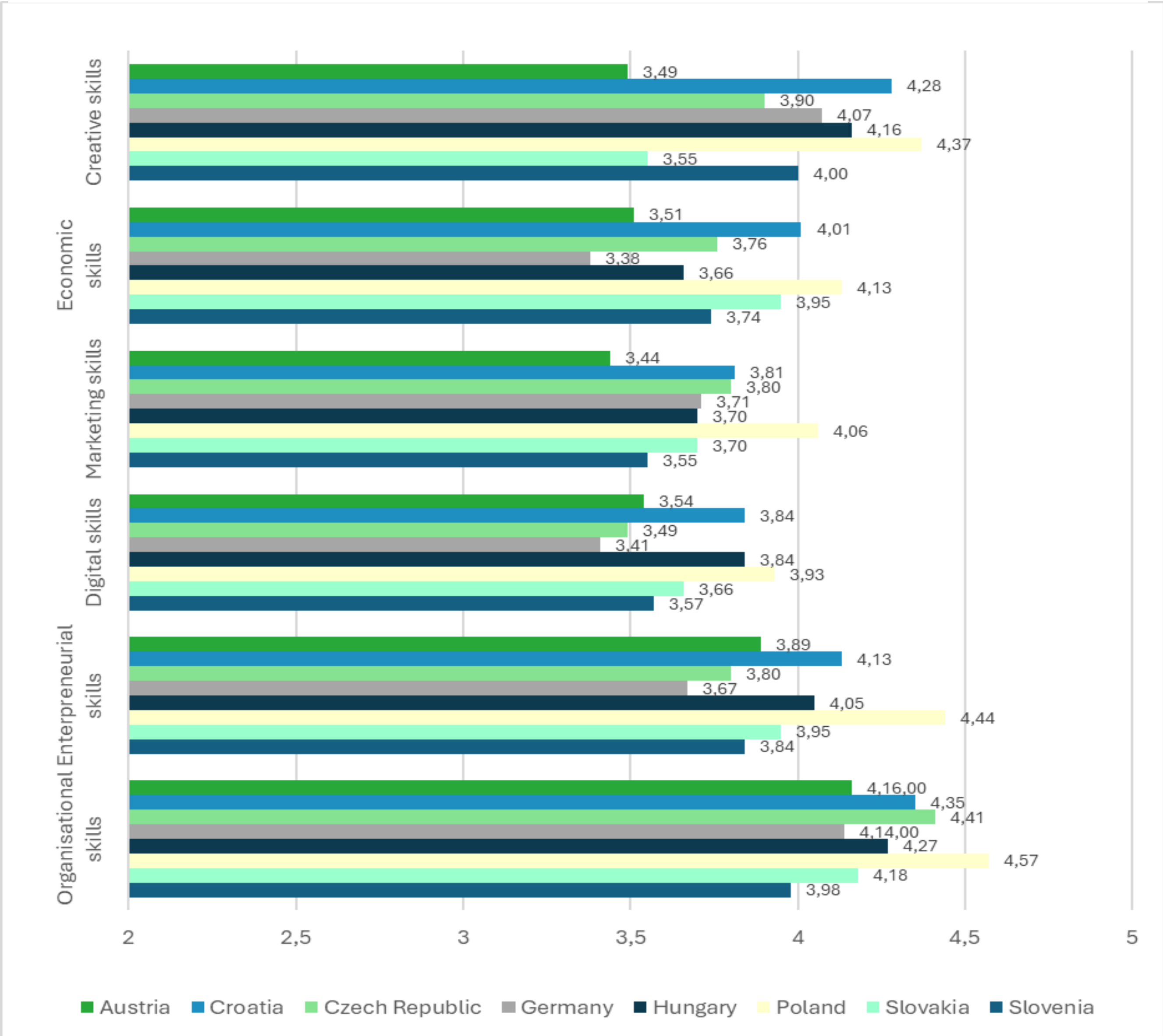
Source: Lyons et al., 2019

2.8 Entrepreneurship: survey results

The following section presents the findings focusing specifically on the entrepreneurial aspects of the respondents. It is important to note that the results presented in this section are based on data gathered through a self-assessment approach, which offers valuable insights into the perspectives of cycling tourism SMEs, but it is important to acknowledge that the data reflects their own subjective perceptions.

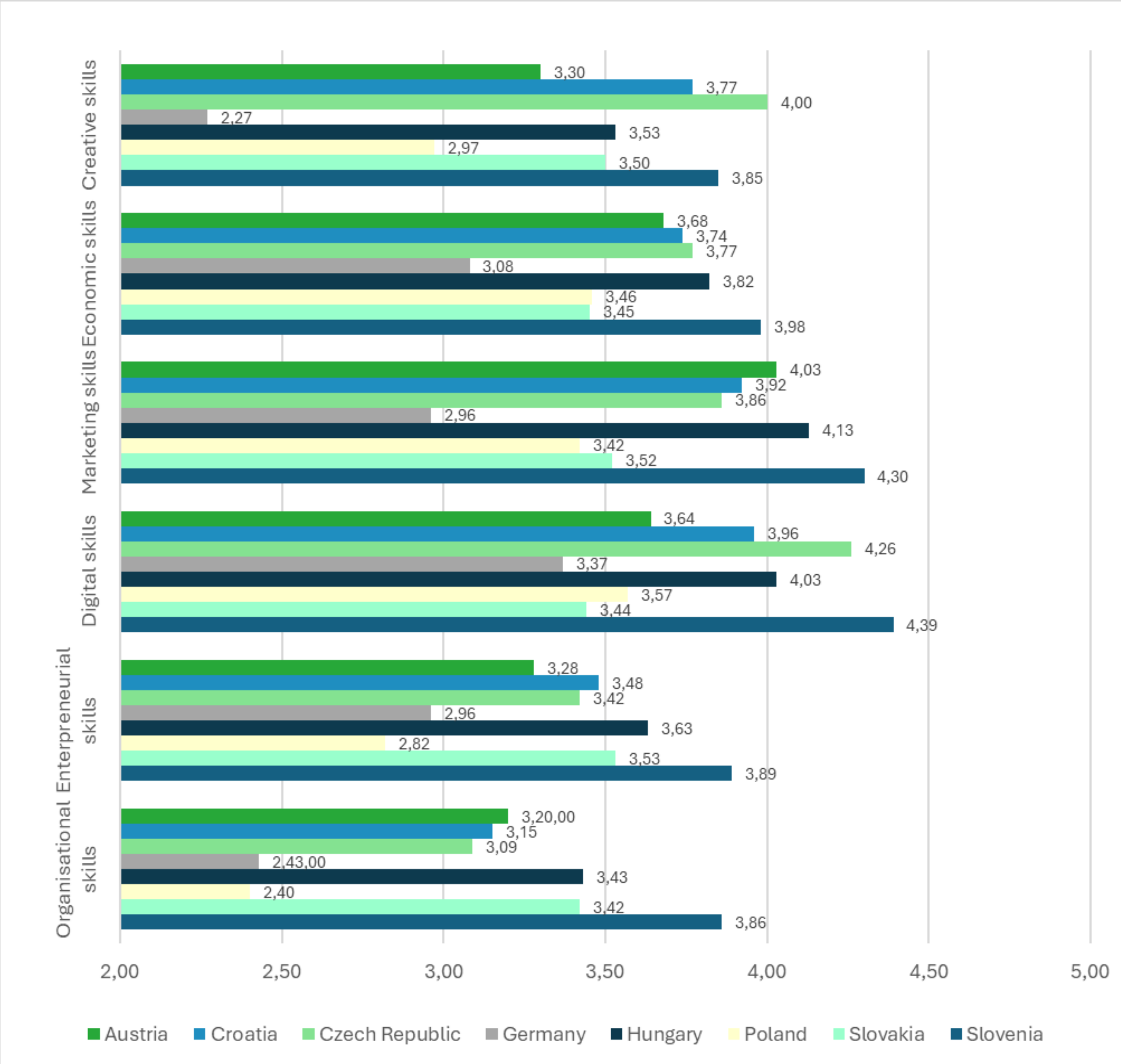
The graph in Figure 18 illustrates the current skills level among cycling tourism SMEs from partners countries. It reveals that Polish SMEs are at the forefront in every skill category, with Croatia, Hungary, Slovenia, and others trailing behind. Austria was noted for having the lowest skill level across all categories. Organizational, entrepreneurial, and creative skills categories were the highest rated on average among all cycling tourism SMEs. The lowest proficiency was recorded in the digital skills category, with the minimal scores attributed to Germany, Austria, and Slovenia. This was followed by shortcomings in Marketing and Economic skills.

Figure 18: The current level of skills among cycling tourism SMEs from partners countries



The graph in Figure 19 illustrates the importance of future skills needs among cycling tourism SMEs from partners countries. Digital and marketing skills emerged as the most demanded (with Slovenian and Hungarian scores leading both categories), whereas organizational skills were deemed the least important – presumably already sufficient. These findings align closely with the respondents' current skills proficiency as indicated in the preceding graph, where organizational skills were rated the highest and digital skills the lowest.

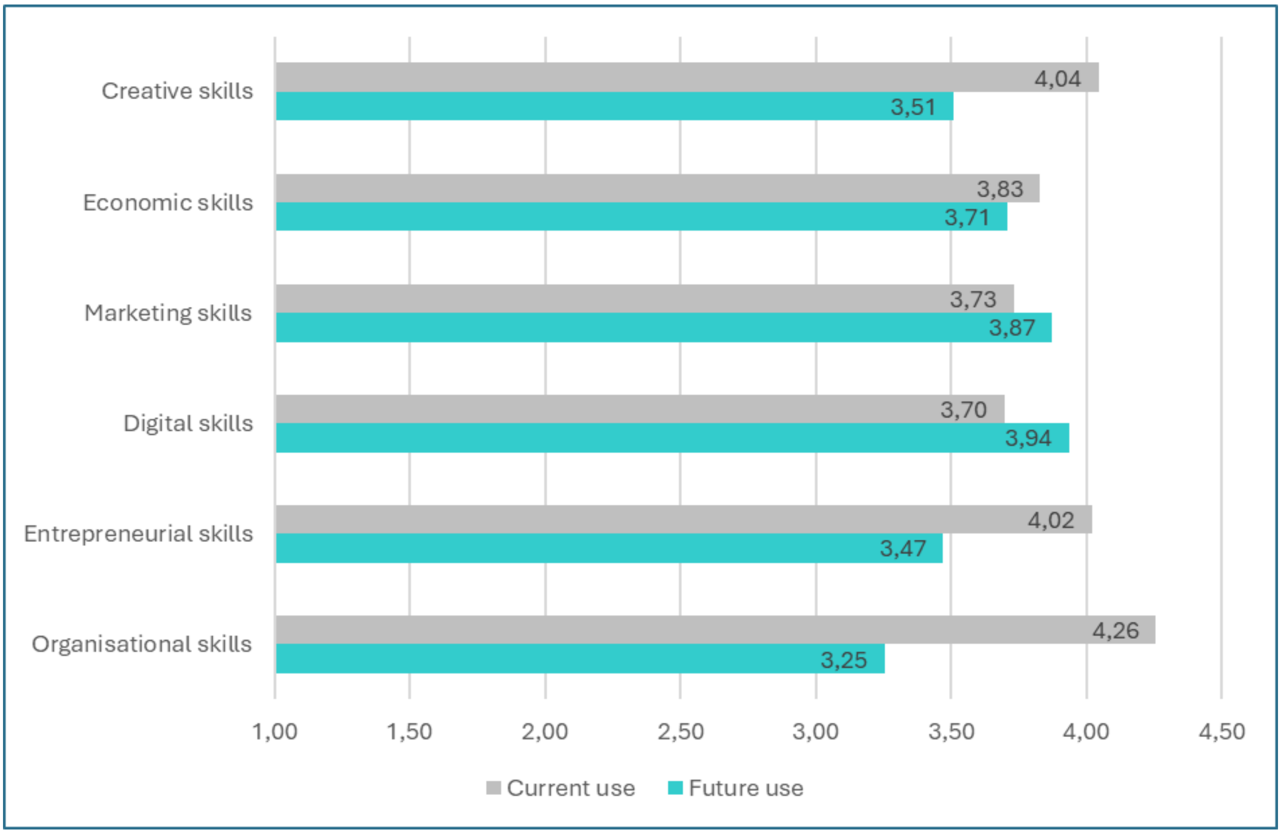
Figure 19: Future skill needs among cycling tourism SMEs from partner countries



The graph in Figure 20 illustrates a comparison between the current skill sets possessed and the future skill needs among cycling tourism SMEs. The results highlight a pronounced need for improvement in marketing and digital skills among respondents, in contrast to organizational, entrepreneurial, and creative skills, which are deemed less important - already sufficient.

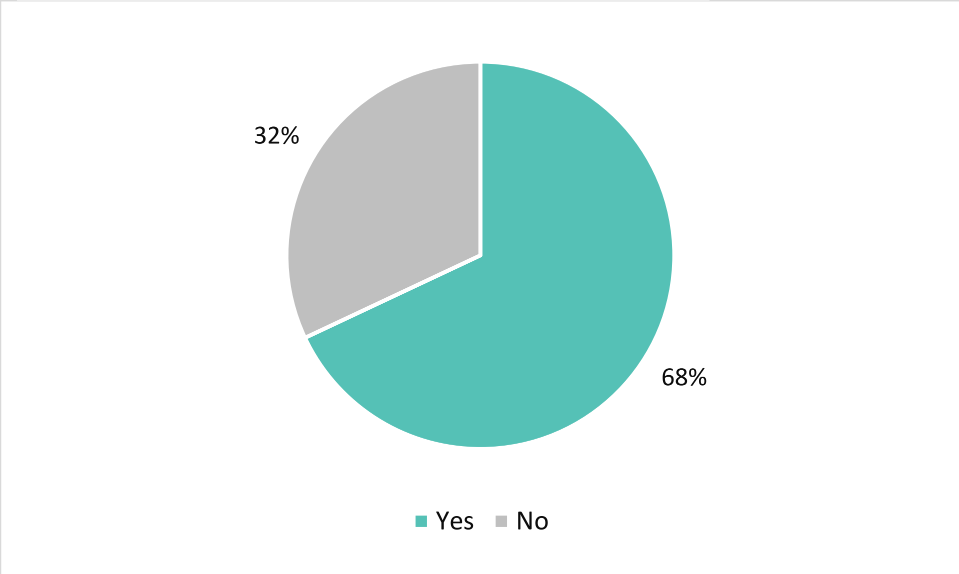
To achieve improvement in marketing and digital skills, the ICTr project will design multiple trainings and mentoring programs to foster the long-term advancement of competencies in the area.

Figure 20: The importance of present and future skills of the cycling tourism SMEs from partner countries



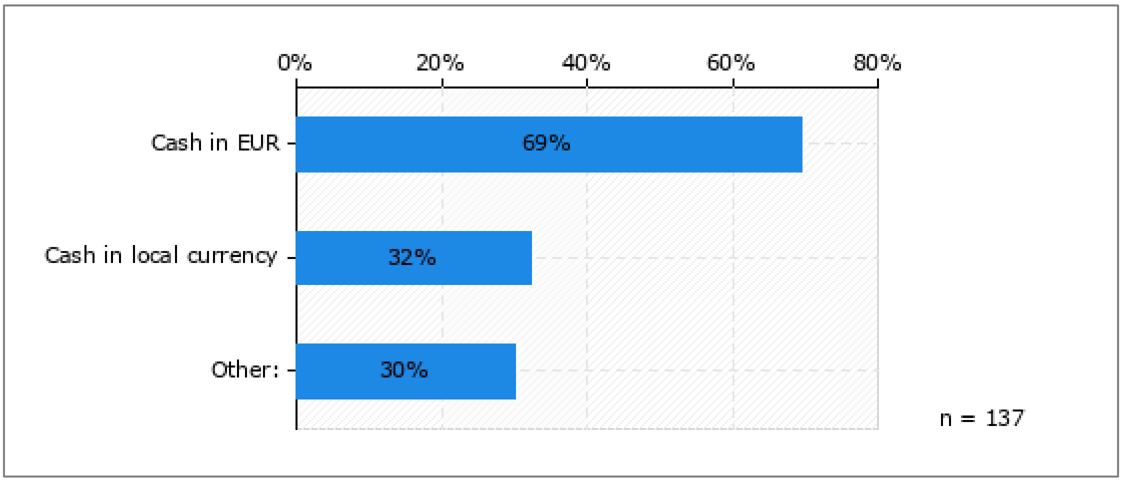
The respondents were asked whether their company or organization accepts digital payment methods such as credit cards, etc. A little over two thirds (68%) accepts digital payment methods (n=431).

Figure 21: The use of digital payments



Regarding the type of accepted payment, 69% accept cash in EUR and almost a third (32%) cash in local currencies (countries that don't use the euro as their currency were included as well), as seen in the Figure 22. Other types of accepted payment mostly include bank transaction payment.

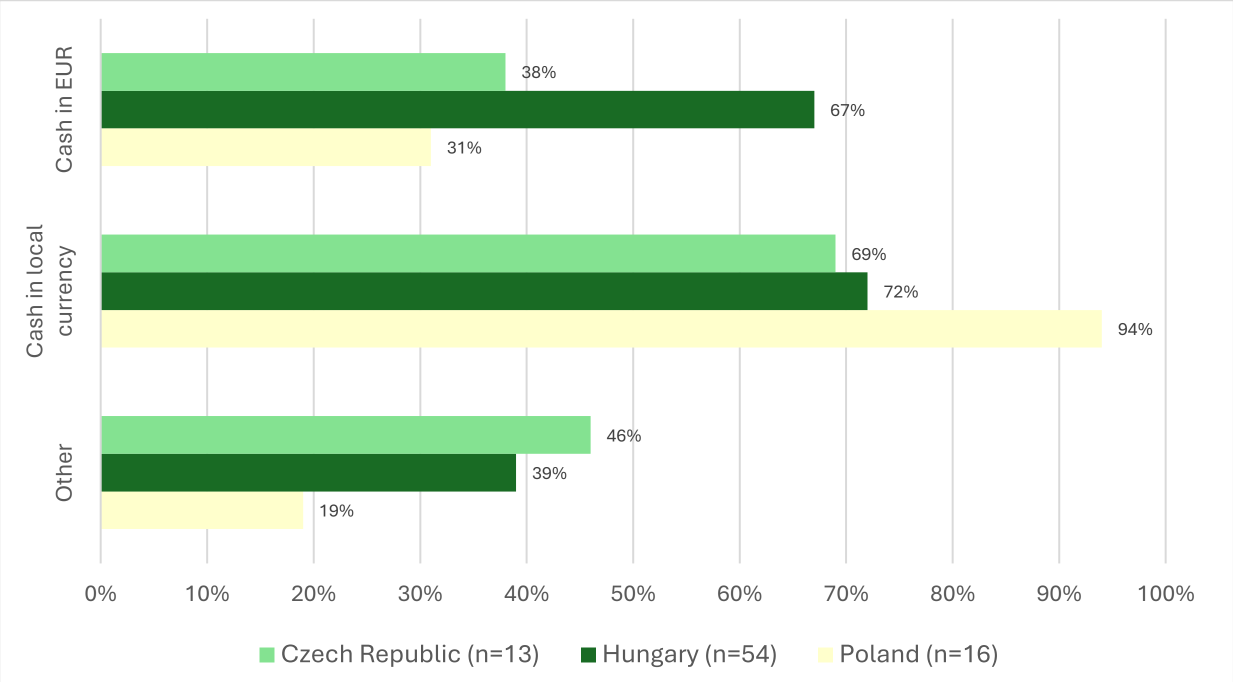
Figure 22: Cash payment options in all project partner countries (including non- Eurozone)



The results shown Figure 23 are somehow more relevant since they show current situation in the partner countries where euro is not used as a currency, i.e. Chechia, Hungary and Poland (although there are limitations due to low response rate which is indicated in the Figure).

The survey reveals a notable disparity in euro cash acceptance among SMEs in these three countires. While a significantly higher proportion (67%) of Hungarian SMEs accept cash in euros, the acceptance rate remains considerably lower in Poland (31%) and Czechia (38%).

Figure 23: Cash payment options in project partner countries outside the Eurozone



2.9 Sustainability needs

Sustainability is a multifaceted concept encompassing environmental, economic, and social aspects (Purvis et al., 2019). While some authors add cultural and security aspects to the three primary pillars (Bervar & Bertoncelj, 2016), most agree on the importance of understanding their interconnectedness (Elkington, 1994; Dörgő, 2018; Teodorescu, 2012). Teodorescu (2012) emphasises sustainable development through environmental, resource, and human health goals, linking the environmental-economic-social pillars to ensure human well-being, healthcare, ecological responsibility, and income. This discourse reaches tourism studies, as tourism significantly impacts sustainable development in terms of local economy, community development, and environmental conservation (Kataya, 2020). According to Serrano-Barquín et al. (2012), it is crucial to consider both natural and cultural factors in the relationship between tourism, local development, and sustainability rather than analysing them separately.

Sustainable tourism should thus consider its development holistically, taking into account both the environment, society and its economic attribution. Cycling tourism, as stressed by Weed (2014), due to its nature, has a particular capacity to decrease the usage of motorised transportation and encourage sustainable development. Moreover, to promote the long-term viability of cycling tourism, Crotti et al. (2022) propose the integration of greener forms of transportation in urban regions, while Gazzola (2018) encourages cycling tourism's potential to boost sustainable tourism development in obscure or isolated regions.

According to the European Cyclists' Federation (ECF) and the World Cycling Alliance (WCA), cycling is connected to 11 out of 17 UN Sustainable Development Goals (European Cyclists' Federation, 2021). Ciascai et al. (2022) emphasize the significance of cycling tourism in sustainable tourism, as it connects with communities of cycling tourists who enjoy exploring lesser-known areas. Cycling promotes sustainable transportation and has positive effects on public health, climate change, the economy, the environment, and air quality, and is thus a potential driving force for holistic sustainable development.

The Charter for Sustainable and responsible cycling tourism in the Mediterranean area highlights the environmental sustainability of cycling, including reducing pollution and congestion. Cycling infrastructure requires less space compared to car infrastructure, resulting in reduced soil and water pollution. Electric bikes may substitute for motorised trips, and cycle tourists often choose public transport over planes, promoting environmental sustainability (EuroVelo, 2023).

Han et al. (2020) predict that cycle tourism will undergo significant changes in the future, incorporating electric bicycles and sustainable practices to address environmental and societal issues. Metropolitan areas are expected to improve infrastructure and amenities, while sustainable tourism efforts focus on promoting eco-friendly cycling practices.

Cycle tourism projects, like the one in Northern Italy studied by Gazzola et al. (2018), show how cycling can promote sustainable tourism in rural areas. They highlight the benefits of cycling, including using train connections, but acknowledge that some visitors may still use planes or cars depending on where they are. Overall, they argue that cycling tourism can lead to sustainable long-term tourism development.

Cycling tourism may be made more sustainable through a variety of techniques, according to several sources. While Crotti et al. (2022) emphasise the necessity of cycling tourists visiting metropolitan areas and taking greener modes of transportation, such as public transit, Pröbstl-Haider (2018) argues the importance of collaborative planning and the development of well-maintained trails and appealing recreational infrastructure. Furthermore, Chen (2016) emphasises the need for integrated bike-rail transportation services that take into account aspects such as pricing, bike storage, and service frequency. In order to promote sustainable cycle tourism Meschik (2012) emphasises the importance of strong tourist infrastructure, regional attractions, and beautiful terrain.

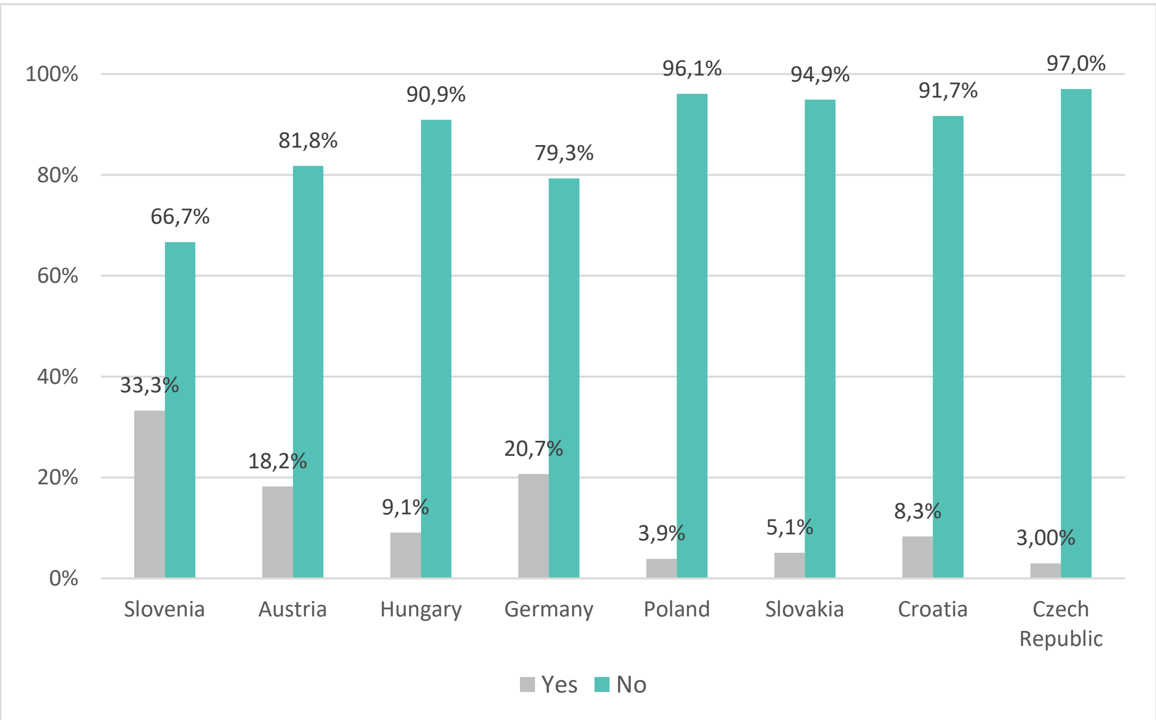
According to Weed (2014), the adoption of widely recognised sustainability practices by providers in the tourism industry has a positive impact on bicycle tourism. This is primarily due to the incentivization of sustainable travel and the subsequent reduction in reliance on motorised transportation, facilitated by green certifications. Although there is limited literature available on the topic of bicycle tourist sustainability certificates, existing studies have highlighted the capacity of cycling tourism to reduce reliance on motorised transportation (Weed, 2014). Environmental certification and sustainability reporting have been studied in the tourist sector (Buckley, 2012), but its specific relevance to bike tourism is unclear.

2.10 Sustainability: survey results

While there is little discussion on sustainability certificates in the literature, studies suggest there is growing awareness for the implementation of such measures (Weed, 2014; Crotti, 2022). Accordingly, our study found that only 15% of respondents are certified as sustainable/green providers, while the majority believe it contributes the least to the preservation of our environment and society, ranking last among all suggested solutions.

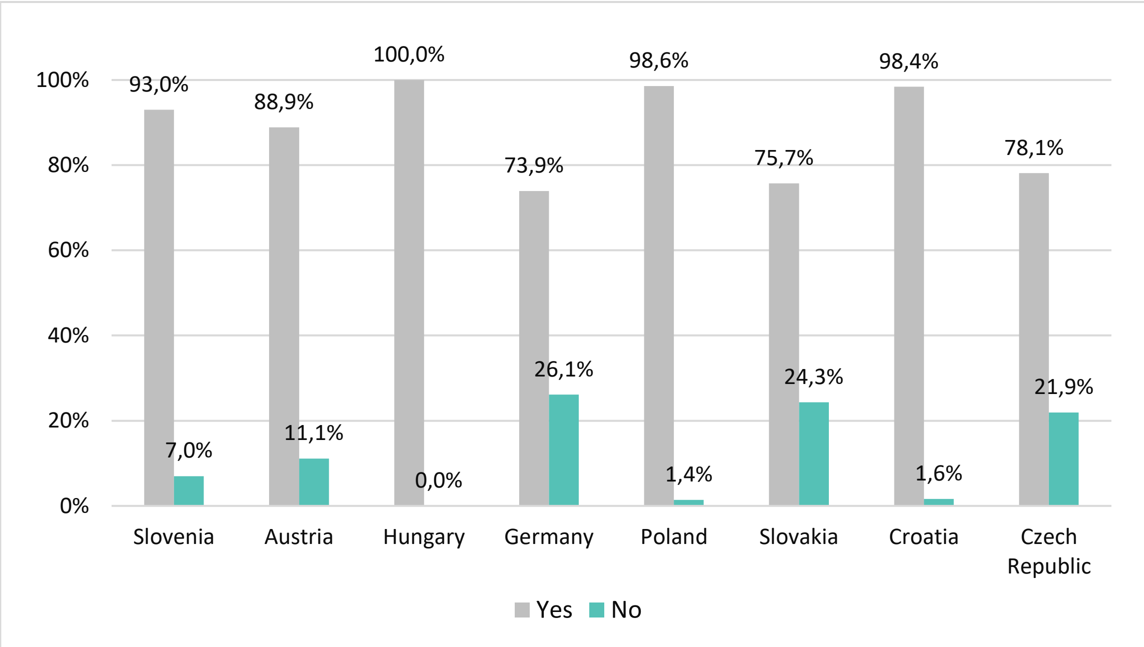
To be more specific, the majority of certified providers used in our research originate from Slovenia, followed by Germany and Austria, as can be seen in the following table. On the other hand, Czechia, Poland, and Slovakia are the countries with the least sustainable service providers, followed by Croatia and Hungary.

Figure 24: Sustainability certification



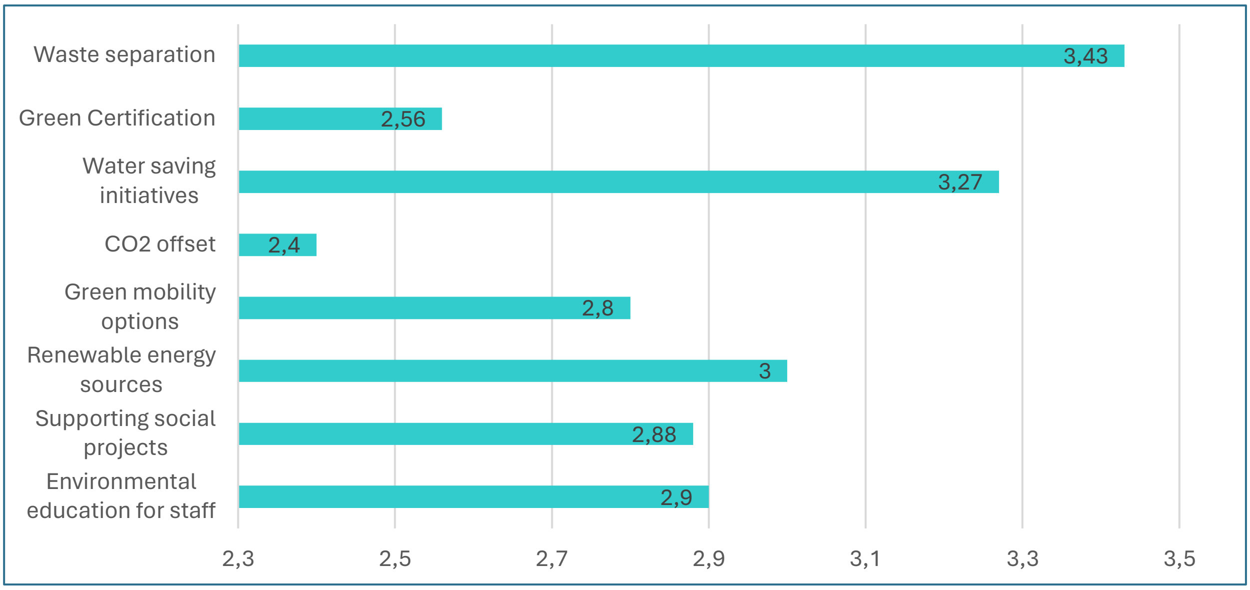
Nevertheless, a vast majority of 92 % are open to the concept of implementing sustainable practices. This includes all of the countries that participated in the study, as the interest ranges between 75 % and 100 %. The graph that follows demonstrates that only participants from Germany, Slovakia, and Czechia showed a level of disinterest in the concept of moving towards sustainability that was slightly higher than 20 %. It should be noted, on the other hand, that every single participant from Hungary expressed an interest in green practices.

Figure 25: Sustainability orientation



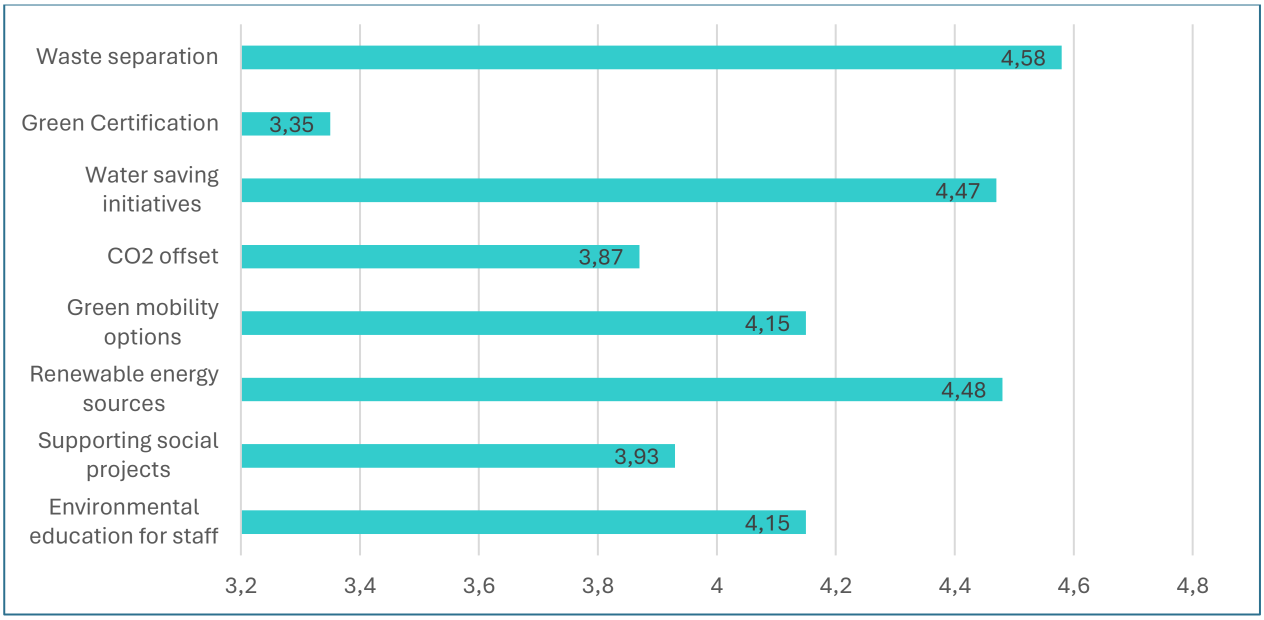
Additionally, our informants found waste separation to be the easiest sustainability measure to for preserving our nature and society (M 3.43), along with the water saving initiatives (M 3.27). Conversely, our informants believe that the most difficult measures to implement are CO2 offset (M 2,4) and green certification (M 2.56).

Figure 26: The ease of sustainability implementation



The results show that the respondents believe that waste separation, which is actually the easiest to adopt, also contributes to the most significant environmental benefits (M 4.58), closely followed by renewable energy sources and water saving programmes. Green certification is believed to be the least significant contributor to sustainability (M 3.35).

Figure 27: The impact of sustainability measures



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