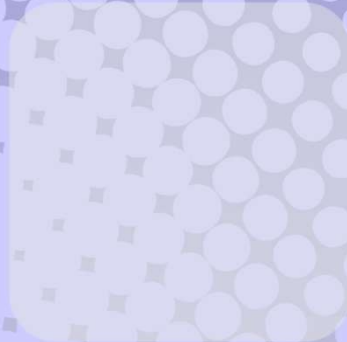


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## **SLOW FOOD IMAGE AND SUSTAINABLE RURAL TOURISM: A COMPARATIVE STUDY OF SERBIA AND HUNGARY**

**Aleksandra VUJKO<sup>a\*</sup>, Drago CVIJANOVIĆ<sup>b</sup>, Dušica CVIJANOVIĆ<sup>b</sup>**

<sup>a</sup> Singidunum University, Faculty of Tourism and Hospitality Management, Danijelova 32, 11000 Belgrade, Serbia, (<https://orcid.org/0000-0001-8684-4228>)

<sup>b</sup> University of Kragujevac, Faculty of Hotel Management and Tourism in Vrnjačka Banja, Vojvodjanska 5a, 36210 Vrnjačka Banja, Serbia. (<https://orcid.org/0000-0002-4037-327X>; <https://orcid.org/0000-0002-5220-465X>)

\* corresponding author

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### **Abstract**

Over the last couple of years, slow food has developed as a sustainable form of tourism capable of transforming rural destinations and their development. In the hustle-bustle that everyone goes through, people are constantly looking for oases of peace and ways to restart and be well, feel healthy. The paper started from the initial hypothesis H that slow food has a direct impact on the sustainable development of rural destinations, but we wanted to get information about what kind of gastronomy affects the sustainable development of rural destinations and how it happens? The research was carried out with the guests of two traditional restaurants where local, traditional cuisine is prepared and served in a traditional way—one in Hungary and the other in Vojvodina (Serbia). A total of 493 guests from these two restaurants were interviewed so as to obtain information on what influences the creation of positive slow food images. It has been concluded that slow food concretes are influenced by some attributes such as: Value for money, quality of food, quantity of dishes, variety of dishes, food presentation, and overall traditional meal experience and also the surroundings' attractiveness. High scores for these attributes confirm the positive influence of slow food on sustainable development of rural destinations.

**Keywords:** slow food, rural tourism, sustainable development, gastronomy, Pannonian plain

### **INTRODUCTION**

The modern population is increasingly exposed to a constant influx of stressors (DuBois et al., 2024). Contemporary lifestyles require individuals to move quickly, yet in reality they engage in minimal physical activity while often consuming unhealthy foods, which further contributes to various illnesses (Luo et al., 2024). Considering current trends in the food manufacturing industry, it would not be surprising if, in the near future, meals were replaced by nutrient tablets designed to meet basic daily needs (Sharma et al., 2024). This alarming direction is reflected in the global rise of obesity (Wang et al., 2025) and the increasing incidence of cancer and other life-threatening diseases (Venugopal & Pechous, 2024). In response to these challenges, individuals have begun to explore alternative approaches that

promise a healthier and more balanced lifestyle, one of which is sustainable gastronomy (Yıkımlı et al., 2022; Sgroi, 2023). Sustainable gastronomy emphasizes the origin of ingredients as well as environmentally responsible production and distribution practices (Nyberg et al., 2022). Given the intensifying impacts of climate change, the rapid growth of global waste, and the accelerated depletion of natural resources, sustainability is required across all societal sectors (Batat, 2020). Gastronomy is no exception (Yıkımlı et al., 2024). Closely linked with notions of “good food,” it encompasses not only refined taste and gourmet experiences, but also the cultural dimensions reflected in local food traditions (Yilmaz & Yalcin, 2024).

A key movement advocating these principles is Slow Food—an Italian initiative promoting mindful eating, seasonal products, and reduced environmental impacts of food production, while supporting local producers and traditional practices (Hamada et al., 2024). Founded by Carlo Petrini in 1989, it encourages the preservation of traditional cooking methods and local ingredients (Reed, 2008). The movement’s philosophy integrates pleasure in eating with care for the community and the environment. Beyond culinary practice, Slow Food represents a lifestyle rooted in hedonism, health, ecology, and sustainable development (van Bommel & Spicer, 2015), standing in opposition to the values of fast food culture. Recognizing the need to slow down, reconnect with nature, and improve overall well-being, many individuals increasingly seek rural environments as places of escape and renewal. Rural tourism (Panić et al., 2024; Nastić et al., 2024) has thus emerged as a form of sustainable tourism offering leisure activities, peaceful surroundings, and authentic cultural experiences (Bojović et al., 2024). Within this context, Slow Food plays a significant role by representing sustainable gastronomy served in traditional settings, often reminiscent of ancestral ways of preparing and consuming food (Carvache-Franco et al., 2021). Slow Food imagery evokes relaxation, pleasure, and meaningful social interaction, shaped by the surrounding atmosphere and gastronomic experience (Rinaldi, 2017). Meals become celebratory moments shared among family and friends, fostering intimacy, conversation, and emotional comfort.

As a sustainable tourism model (Vujko et al., 2021; Bešić et al., 2024), rural tourism is increasingly recognized as a strategy for improving socio-economic conditions in rural destinations (Crăciun et al., 2022). Seal (2022) defines rural tourism as a set of tourism activities connecting visitors with outdoor recreation, agriculture, rural lifestyles, and local culture, including fishing and nature walks (Gao & Wu, 2017; Wijijayanti et al., 2023). Rural environments offer opportunities for rest, experimentation, and immersive experiences in local living conditions. Gastronomy—particularly Slow Food—has proven to be a key

indicator of sustainable development in rural destinations and forms an essential link between rural tourism and long-term sustainability (Addai et al., 2024).

The success of Slow Food tourism depends on implementing effective measures to support small-scale producers and family farms, which in turn enhances community empowerment and strengthens the regional economy. The empirical research was conducted with 493 respondents—diners in two sample restaurants offering exclusively traditional dishes made from local ingredients. The goal was to understand how tourists perceive and evaluate rural tourism experiences that include Slow Food. Considering similarities in geography, customs, and culinary traditions between Hungary and Serbia, the authors expect that the findings will be useful for advancing rural tourism development in Serbia. The key outcome of this research indicates that Slow Food images are shaped by tourists' perceptions of value for money, food quality, number and variety of dishes, presentation, traditional meal experience, and the attractiveness of the surrounding environment.

## **LITERATURE REVIEW**

Sustainability in gastronomy encompasses criteria drawn from ecology, economics, sociology, and public health, particularly emphasizing safe and nutritionally valuable food. According to Calbi et al. (2024), ecological criteria refer to the processes used in obtaining sustainable inputs. These criteria highlight production methods that positively affect local ecosystems and natural resources (Jonsson et al., 2024). Within ecological dimensions, key activities include the use of environmentally beneficial products, adherence to animal welfare standards, and the promotion of employee awareness regarding sustainability (Aguilera & Rozzi, 2024). Desirable ecological practices further involve sourcing meat from animals raised under controlled grazing conditions, selecting fish from sustainable stocks, prioritizing seasonal ingredients, ensuring full traceability of food origins, minimizing food miles, and properly managing kitchen waste (Cheng et al., 2024). Economic sustainability, according to Sgroi (2022), is achieved when operational processes are financially viable, support local economic growth, and result in products priced reasonably for consumers (Pulina et al., 2021). Investments in energy-efficient systems are often introduced not only to support environmental goals but also to improve long-term economic performance (Papendiek et al., 2016; Stefan et al., 2021). Social sustainability focuses on integrating all stakeholders within the circular economy—from producers and distributors to hospitality providers and final consumers (Stanojević et al., 2021). Central to this approach is building trust and ensuring

complete product traceability (Chen et al., 2023). In practice, social sustainability is reflected in the preservation of cultural traditions, fair treatment of workers in terms of wages and working conditions, and ongoing education regarding food safety and sustainable gastronomic practices.

Health-related sustainability emphasizes the importance of organic food production. According to Akther et al. (2024), sustainable healthy food is often equated with organic food—products cultivated through organic farming methods as outlined by the International Federation of Organic Agriculture Movements (Anjos et al., 2020). Although definitions vary across regions, organic farming typically prioritizes resource cycling, ecological balance, and biodiversity conservation (Baker et al., 2002; Barbosa et al., 2018). Regulatory bodies restrict the use of pesticides, fertilizers, irradiation, industrial solvents, and synthetic additives. Organic products must be free of genetically modified organisms and artificial chemicals (Bergstrand, 2022). Organic animal-based products—such as certified organic eggs—must comply with animal welfare standards, including access to free-range conditions rather than battery cages (Tao et al., 2015).

The Slow Food movement represents another major contribution to sustainability in gastronomy. Founded by Carlo Petrini in Bra, Italy, in 1989, Slow Food emerged as a counter-movement to the rise of fast-food culture, symbolized at the time by the opening of the first McDonald's in Rome (Fusté-Forné & Jamal, 2020). Its philosophy is grounded in three principles: good, clean, and fair. “Good” food refers to high-quality, tasty, and healthy products that reinforce cultural and geographical identity (Jackson et al., 2023). “Clean” food emphasizes environmentally responsible production that avoids harming natural ecosystems (Chauhan & Rao, 2024). “Fair” food requires socially sustainable conditions, ensuring equitable wages and treatment for producers while maintaining reasonable prices for consumers (Martínez-Sykora et al., 2024). The Slow Food ethos integrates organoleptic quality, memory, and emotional connections to food with ethical production processes that respect both ecosystems and social relationships. Fairness includes adequate compensation for small-scale producers and equity throughout production and distribution systems. To achieve its goals, the movement promotes an alternative lifestyle that challenges the fast-paced consumer culture of modern society (Moliterni et al., 2025). By encouraging a shift in paradigms and emphasizing tradition, culture, and national identity, Slow Food has evolved into a global network—supported particularly through the Terra Madre initiative—which unites local food communities and individuals sharing the movement's ideals (Fusté-Forné & Jamal, 2020).

In the context of this study, the term “slow food image” refers to the set of cognitive, affective, and sensory impressions associated with traditional local gastronomy. This image encompasses several dimensions—perceived food quality, authenticity, traditional preparation, sensory experience, service style, and the cultural-symbolic meaning attached to dishes. These dimensions collectively shape how visitors interpret and emotionally respond to local cuisine. As emphasized in tourism literature, food functions not only as a nutritional element but also as a cultural marker that shapes visitors’ perceptions of a place (Björk & Kauppinen-Räsänen, 2016). Research further shows that gastronomic image is constructed through the interaction of environmental cues, local ingredients, meal presentation, and personal expectations (Kim, Eves & Scarles, 2009; Sims, 2009). Accordingly, the slow food image encompasses the holistic sensory and emotional experience generated through local cuisine—how it tastes, how it is presented, and how it reflects regional identity and heritage. In this study, the slow food image is operationalized through seven (later expanded to nine) attributes measured on a five-point Likert scale, capturing visitors’ evaluations of value for money, food quality, variety, presentation, and the experiential and environmental context of the meal. In this sense, the slow food image operates as a motivational and experiential dimension that contributes to destination attractiveness and influences tourists’ evaluations and behavioral intentions. The conceptual logic underlying this framework follows a simple process: traditional gastronomic offerings and the natural environment shape visitors’ perceptions of food quality and authenticity; these perceptions influence satisfaction with the overall experience; satisfaction, in turn, strengthens support for rural destinations and contributes to sustainable tourism development. This relational structure is consistent with established models linking food-based experiences, destination image, and behavioral intentions in tourism research (Kim et al., 2009; Sims, 2009).

Agritourism represents a distinct and increasingly important form of rural tourism in which agricultural activities, traditional food production, and farm-based experiences constitute the core elements of the tourist offer. Phillip et al. (2010) define agritourism as tourism that occurs on working farms, where visitors engage with agricultural landscapes, local gastronomy, and rural culture. Owing to its reliance on short food supply chains, local ingredients, and direct interaction between producers and consumers, agritourism is widely considered one of the most sustainable models of rural tourism development (Barbieri & Mshenga, 2008; Vujko et al., 2025). Sustainability in agritourism is expressed economically—through diversification of farm income; socially—through preservation of cultural practices, traditional knowledge, and rural identity; and environmentally—through

promotion of ecological farming practices and reduction of transportation-related emissions (Tew & Barbieri, 2012; Cvijanović et al., 2025). Local gastronomy plays a central role: meals offered to visitors are commonly prepared from home-grown or regionally sourced ingredients, enhancing perceptions of authenticity and strengthening the connection between food, place, and identity (Recuero-Virto & Valilla Arróspide, 2024; Paunić et al., 2024). In this regard, agritourism closely aligns with the principles of the Slow Food movement, as both emphasize traditional production, high-quality local foods, and respect for ecological and cultural values. Agritourism also contributes to the preservation of rural landscapes, supports small family farms, and stimulates local economies, making it an effective strategic tool for sustainable rural development. By integrating agriculture, sustainability, and tourism, agritourism provides an essential conceptual link between local gastronomy and rural tourism practices relevant to this study.

## **METHODOLOGY**

The research conducted for the purposes of this paper was based on the methodology previously used by Nield, Kozak and LeGrys (2000). Using a modified version of their approach, respondents were asked to rate seven attributes—value for money, food quality, number of dishes, variety of dishes, food presentation, overall traditional meal experience, and attractiveness of surroundings—on a five-point scale from one to five. The authors of this paper used these attributes to sketch the images of slow food in the perception of 493 guests. These slow food images are not only related to the taste and quality of the food itself, but arise from the entire set of circumstances that shape guests' impressions. The authors assume that it is important for guests to receive the value they expect for their money, which, in a rural environment, is often associated with the taste of food prepared “like at grandma’s house.” In fact, the attribute “value for money” contains an emotional component that is highly individual for different guests. Food quality undoubtedly refers to the impact that food has on human health and is linked to the “from field to table” concept, which implies that the guest can at any time know the origin of each ingredient that goes into a meal. To adapt the original Nield–Kozak–LeGrys (2000) scale to the context of traditional gastronomy in rural areas, a reduced and culturally adjusted set of attributes was selected. The wording of items was refined to reflect region-specific elements of slow food, and the instrument was translated and back-translated to ensure semantic and cultural equivalence. This modified version thus preserves the core evaluative structure of the original scale while strengthening its contextual relevance.

The number of dishes served to the guest is perceived as part of a traditional manner of serving food: starting with appetizers, then soup or stew, followed by the main course, salad, bread and finally dessert. The richness of the table is something common in these regions and is considered part of tradition. Visual “pictures” also affect slow food images. The manner of serving has an additional effect: waiters with a smiling face and positive attitude represent the sense of hospitality that can be felt in the regions where the research was conducted. Food and table offerings can equally be considered part of this slow food perception. A large menu with many different traditional dishes, all of high quality and very tasty, plays a major role in reinforcing the images that slow food evokes. After the method of serving food—that is, how the food is brought to the guests—other elements also matter. Ideally, the restaurant is full, guests ask for more, and leave with a smile on their face. The area surrounding the restaurant should also be arranged in a typical traditional manner, with appropriate decorations and props. At first sight, the place should clearly signal what type of food is served there. Traditional furniture and decorative elements are expected in both the interior and exterior. Music is also very important: these parts of the country are associated with tamburica and folk music performed with tamburica or accordion. Last but not least is the location of the restaurant—namely, the wider environment and atmosphere. The ambiance of a traditional restaurant should be closely linked with nature and provide an environment that facilitates relaxation and enjoyment, promotes peace and tranquility, and by its appearance fosters a good mood among guests.

The authors visited two restaurants for better representation: one located in Hungary and the other in Vojvodina (Serbia). The research was conducted over a period of more than two years, from March 2022 until September 2024. The survey, in the form of interviews, was carried out personally by the authors. Guests of these restaurants were interviewed, and the data were recorded during conversations and informal chats. The authors assumed that this approach would elicit more honest answers, given the intimate and relaxed ambiance. For each attribute, interviewees were given an explanation of what it represents and what it means, so there were no equivocal answers. The sampling approach corresponded to sequential convenience sampling, where every guest present at the time of the researchers’ visit and willing to participate was included. Participation was voluntary and anonymous, and no exclusion criteria were applied beyond willingness to take part. The final sample consisted of 493 participants, of whom approximately 54% were female and 46% male. The age structure ranged from 18 to 74 years, with the largest share of respondents belonging to the 30–49 age group. Around two-thirds of the participants were domestic visitors, while one-third were foreign guests, reflecting the typical composition of visitors in both study locations.

The Hungarian restaurant is located inside the Hortobágy National Park and is named Hortobágyi Csárda, while the Serbian restaurant is located within the Fruška Gora National Park and is called Banstolka. Both are situated in the Pannonian Plain; their geographical characteristics and the traditional principles of the people living there provide ample justification for claiming a strong similarity between the two. In Hungary, rural tourism is highly developed and is clearly present on the agenda of top decision-makers. In Serbia, however, rural tourism is not yet developed in accordance with its real potential and still remains below the level of possibilities. The authors thus collected information based on the scrutiny of hospitality guests' perceptions regarding slow food within the gastronomic offer and its importance, and examined whether there are differences in the offer between the two nations, given their different stages of rural tourism development. Both restaurants were treated as case-study sites, selected for their representativeness of traditional rural gastronomy rather than for statistical generalization. Accordingly, the findings should be interpreted within the framework of case-based inquiry.

This study begins from the main hypothesis (H) that Slow Food represents a dimension that is associated with and may contribute to the sustainable development of rural tourism and, consequently, to the sustainable development of rural destinations. In line with the theoretical framework and the research objectives, two research questions were formulated: What type of gastronomy can sustainably develop rural areas? How does gastronomy influence sustainable rural development? Based on these questions, two sub-hypotheses were derived:

H1: Local food and beverages may support the development of rural destinations by enhancing the authenticity, attractiveness, and overall value of the gastronomic offer.

H2: Sustainable food and beverage production may contribute to the sustainable development of rural destinations by reinforcing ecological, cultural, and socio-economic sustainability.

It should be emphasized that both sub-hypotheses are examined at a micro-level through guests' perceptions, rather than through systemic or objectively measured sustainability indicators.

The main hypothesis (H) and the two subordinate hypotheses (H1 and H2) were empirically tested through evaluation of guests' perceptions across nine attributes related to the slow food experience, as well as through comparative analysis between respondents from Serbia and Hungary. It is important to note that the study examines guests' perceived sustainability impacts rather than objective environmental indicators. The focus is therefore

on subjective evaluations of ecological, cultural, and socio-economic dimensions embedded in the slow food experience.

To ensure methodological rigor, a combination of complementary statistical procedures was applied. Descriptive statistics (means and standard deviations) were computed to provide an overview of general perception patterns. Based on these results, a ranking procedure was undertaken to identify the most influential attributes shaping the slow food experience. All statistical procedures were performed in IBM SPSS Statistics 29. Given that the variables were measured on a five-point Likert scale and thus represent ordinal data, differences between the Serbian and Hungarian samples were assessed using nonparametric methods. The choice of nonparametric techniques was based on the ordinal nature of the data and the absence of normal distribution assumptions. Values in the lower part of the scale (1–2) appeared only sporadically, which explains why the majority of mean scores fall within the 3–5 range—a common pattern in hospitality satisfaction studies. Cliff’s delta ( $\delta$ ) was used as a robust measure of effect size to evaluate the magnitude of group differences. Additionally, Pearson’s Chi-Square tests were performed to determine whether the distribution of responses differed significantly between the two countries. Statistical significance was evaluated at the  $p < 0.05$  level. This refined and methodologically consistent approach ensured the transparency, robustness, and reproducibility of all analytical procedures.

### **Rural Hungary**

Rural tourism in Hungary began to take institutional form in 1994, when the National Rural and Agrotourism Association assumed responsibility for representing rural tourism service providers (Nemes et al., 2019). Following an organizational transformation in 2001, the National Rural and Agrotourism Association was reorganized into an umbrella association comprising 19 county-level organizations, thereby extending its operational reach throughout the entire country. Today, the Association has approximately 2,000 members (<https://www.ksh.hu>). According to rural hosts themselves, this figure is nearly three times higher than the number registered in the official statistics of the Hungarian Tourism Agency, exceeding 50% of all rural accommodation providers in the country. In 2023, the Central Statistical Office reported 71,232 rooms and 256,962 bed places in private and other accommodation establishments across Hungary (<https://www.ksh.hu>). The National Association of Rural and Agrotourism frequently uses the term “village tourism” as a synonym for the foundational and most widespread form of rural tourism (Szabó, 2006; 2011). According to Gonda and Bori (2023), demand in rural tourism is directly linked to

general motivational trends observed in contemporary tourism. Tourists increasingly seek pristine natural landscapes, clean and aesthetically pleasing environments, and experiences associated with silence, tranquillity, and “perfect” recreation. These motives highlight the attractiveness of “untouched” rural areas as appealing tourism destinations. Nemes et al. (2019) emphasize that rural tourism in Hungary is today primarily dominated by domestic visitors, who account for approximately 90% of all guests. After the millennium, when the proportion of foreign and domestic guests was nearly equal, a significant shift occurred, resulting in a predominant domestic demand.

Regarding gastronomy, Gonda and Bori (2023) note that Hungarian cuisine has roots in ancient Asiatic culinary traditions, enriched over time with Germanic, Italian, and Slavic influences. Some of the most iconic dishes include: Gulyásleves (Goulash Soup): A savory and aromatic dish featuring tender meat and vegetables in a richly seasoned, flavorful broth; Pörkölt: A dense stew typically made from meat and vegetables, characterized by the distinct taste of paprika—a hallmark of Hungarian cuisine; Halászlé (Hot and Spicy Fish Soup): A flavorful and spicy fish soup heavily seasoned with paprika; Lángos (Deep-fried Pastry): A popular street food consisting of deep-fried dough topped with garlic butter, sour cream, and cheese; Kürtös kalács (Nagy, 2018), internationally known as chimney cake, is a traditional Hungarian pastry prepared from a slightly sweet, yeast-leavened dough that is rolled into a long strip and wrapped around a cylindrical wooden spit. The dough is then brushed with melted butter and rolled in sugar before being baked over charcoal or in a rotisserie-style oven. During baking, the sugar caramelizes, forming a shiny, crisp, amber-colored crust. Once baked, the pastry is typically coated with additional toppings such as ground walnuts, cinnamon, cocoa powder, vanilla sugar, or shredded coconut. Contemporary commercial variants may include additional fillings or coatings such as chocolate spreads, but these are modern adaptations and not characteristic of the traditional preparation. Its characteristic hollow, cylindrical shape and spiral structure give it its “chimney” appearance, while its preparation method reflects historic Transylvanian and Hungarian culinary traditions.

## RESULT AND DISCUSSION

Before conducting comparative analyses, descriptive statistics were calculated for all nine examined attributes. The results show that all variables received high average ratings, indicating a generally positive perception of the slow food offer in both restaurants. The highest overall mean values were recorded for **Food quality** ( $M = 4.31$ ,  $SD = 0.73$ ), **Overall traditional meal experience** ( $M = 4.28$ ,  $SD = 0.76$ ), and **Attractiveness of surroundings** ( $M = 4.23$ ,  $SD = 0.80$ ). Slightly lower, but still strongly positive, evaluations were found for

**Variety of dishes** ( $M = 4.20$ ,  $SD = 0.81$ ), **Food presentation** ( $M = 4.18$ ,  $SD = 0.83$ ), and **Number of dishes** ( $M = 4.16$ ,  $SD = 0.82$ ). The lowest mean values were recorded for **Value for money** ( $M = 4.11$ ,  $SD = 0.84$ ), **Standard of food service** ( $M = 4.05$ ,  $SD = 0.87$ ), and **Speed of service** ( $M = 3.98$ ,  $SD = 0.90$ ). These results indicate that the gastronomic elements most strongly shaping the slow food image are those associated with food quality, authenticity, and the overall culinary experience. Together, these nine attributes form an integrated perceptual structure that reflects how guests construct the “slow food image” of a restaurant. In this framework, food-related qualities, serving traditions, and environmental cues jointly shape the experiential meaning attached to slow food. Based on the mean scores of all nine attributes, a ranking was conducted to determine which elements most strongly shape the slow food experience in the examined restaurants. The results show that **Food quality** holds the highest overall position, followed by **Overall traditional meal experience** and **Attractiveness of surroundings**. Mid-ranked variables include **Variety of dishes**, **Food presentation**, and **Number of dishes**, all of which achieved high but relatively similar scores. The lowest-ranked attributes were **Value for money**, **Standard of food service**, and **Speed of service**, although their mean values remained above 3.9, confirming consistently positive evaluations. Taken together, this ranking indicates that respondents attributed greatest importance to the intrinsic qualities of food and the broader experiential atmosphere, rather than operational elements such as speed or standardized service procedures. When viewed as a composite perceptual profile, the overall mean across all attributes ( $M = 4.17$ ) further confirms that the slow food experience is evaluated very positively.

To further examine whether respondents from Serbia and Hungary differed in their evaluations of the nine examined attributes, a nonparametric effect-size measure—Cliff’s delta ( $\delta$ )—was calculated. This method is suitable for ordinal data and provides a robust assessment of the magnitude of differences between two independent groups. Across all nine variables, the obtained  $\delta$  values ranged between 0.01 and 0.08, indicating negligible effect sizes. According to established interpretative thresholds,  $\delta$  values below 0.147 reflect **trivial** differences between groups. These results demonstrate that respondents from the two countries assessed the attributes of the slow food experience in a highly similar manner. In other words, national context did not meaningfully influence perceptions of food quality, authenticity, service, or the overall slow food experience. These findings complement the chi-square tests reported below, reinforcing the conclusion that the two restaurants—although located in different countries—provide highly comparable traditional gastronomic experiences aligned with shared cultural and culinary heritage. It should be emphasized that the  $\chi^2$  results indicate only the absence of statistically significant group differences and do not imply any causal relationship between national context and perception.

Research was carried out among 273 guests of the restaurant Banstolka in the Fruška Gora National Park, Vojvodina (Serbia) and 220 guests of the Hortobágyi Csárda in the **Hortobágy National Park**, Hungary. Respondents were asked questions consecutively and rated them on a scale from 1 to 5. The first attribute was “Value for money,” for which respondents in both restaurants gave very high scores. For restaurants, “value for money” refers to the type of cuisine served, the usual pricing of food, and portion size. In most traditional restaurants, however, this value is linked to the emotions the experience evokes. Based on the responses from both restaurants (Tab.1), what guests particularly appreciated was the sense of family warmth arising from the close relationship between host and guest. Small gestures—such as offering bite-sized canapés of toast bread, quiche, spreads or pâtés, or house appetizers—were highlighted as details that make guests feel special. Small things create memorable experiences.

**Table 1** Value for money

		Country of origin		Total	
		Serbia	Hungary		
Value for money	3	Count	89	79	168
		% within Value for money	53,0%	47,0%	100,0%
		% of Total	18,1%	16,0%	34,1%
	4	Count	100	76	176
		% within Value for money	56,8%	43,2%	100,0%
		% of Total	20,3%	15,4%	35,7%
	5	Count	84	65	149
		% within Value for money	56,4%	43,6%	100,0%
		% of Total	17,0%	13,2%	30,2%
Total		Count	273	220	493
		% within Value for money	55,4%	44,6%	100,0%
		% of Total	55,4%	44,6%	100,0%

The results in Tab.2 indicate that there is no statistical significance in respondents’ answers based on the country in which the study was conducted. This suggests that guests in both restaurants provided very similar responses, implying that the two restaurants share many common elements of traditional culinary culture and local food typical of their respective regions.

**Table 2** Pearson Chi-Square Test

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	,600a	2	,741

The next attribute, food quality, received the highest ratings. Guests of both restaurants uniformly expressed high satisfaction with meal quality (Tab.3). In traditional restaurants, quality is closely linked to the ingredients used. Traditional food products hold particular importance. For a product to be classified as “traditional,” it must be produced in a specific locality—such as a country, region or place—using an authentic recipe. The raw materials and production processes must be carried out within that area. According to Sidali and Hemmerling (2014), traditional food products should have been present on the market for at least 50 years and form part of gastronomic heritage.

**Table 3** Food quality

			Country of origin		Total
			Serbia	Hungary	
Food quality	3	Count	88	60	148
		% within Food quality	59,5%	40,5%	100,0%
		% of Total	17,8%	12,2%	30,0%
	4	Count	101	86	187
		% within Food quality	54,0%	46,0%	100,0%
		% of Total	20,5%	17,4%	37,9%
	5	Count	84	74	158
		% within Food quality	53,2%	46,8%	100,0%
		% of Total	17,0%	15,0%	32,0%
Total	Count	273	220	493	
	% within Food quality	55,4%	44,6%	100,0%	
	% of Total	55,4%	44,6%	100,0%	

Tab.4 shows that respondents’ scores in both restaurants were homogeneous regarding food quality; therefore, no statistically significant difference was found. Slow food images based on food quality relate primarily to the traditional origin of food products from which meals are prepared. This has demonstrated strong importance in forming a positive image of the restaurants.

**Table 4** Pearson Chi-Square Test

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1,452 <sup>a</sup>	2	,484

The following three tables (5–7) refer to traditional serving culture in the regions where the two restaurants are located. As seen in all three categories, respondents again awarded the highest ratings, with no significant difference between the two countries (Tables 6 and 8). The number of dishes served in several courses, the manner of serving, and the variety of tastes

are part of the traditional culinary culture of both Serbs and Hungarians. Culinary heritage and authentic cuisine (Lin et al., 2021) play a vital role in tourism development (Jeroscenkova et al., 2015). Gastronomic heritage has recently become recognized as a distinct segment of cultural heritage. National cuisine reflects regional culture and, when perceived as authentic, attracts tourists seeking true cultural experiences (Yang & Lee, 2019). Preserving culinary heritage contributes not only to increased tourist arrivals but also represents territorial capital that brings social and economic benefits and helps maintain the identity of local ethnic communities.

**Table 5** Number of dishes

			Country of origin		Total
			Serbia	Hungary	
Number of dishes	3	Count	73	67	140
		% within Number of dishes	52,1%	47,9%	100,0%
		% of Total	14,8%	13,6%	28,4%
	4	Count	89	86	175
		% within Number of dishes	50,9%	49,1%	100,0%
		% of Total	18,1%	17,4%	35,5%
	5	Count	111	67	178
		% within Number of dishes	62,4%	37,6%	100,0%
		% of Total	22,5%	13,6%	36,1%
Total	Count	273	220	493	
	% within Number of dishes	55,4%	44,6%	100,0%	
	% of Total	55,4%	44,6%	100,0%	

**Table 6** Pearson Chi-Square Test

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5,551 <sup>a</sup>	2	,062

Authenticity in local food refers to whether its components or preparation methods are specific to a given area (Barska & Wojciechowska-Solis, 2018). A dish is authentic if it is traditionally prepared, uses local ingredients, and is prepared by locals following native methods (Kruzmetra et al., 2018). According to Baldacchino (2015), authenticity derived from tradition includes recipes, ingredients, cooking methods, tastes, eating habits and social symbolism. The manner of serving such food—including the dishes in which food is presented and the size of portions—is equally important. Culture and tradition cannot be viewed separately from local gastronomy, which shapes the identity of a region or nation. Local food is generally considered authentic produce that not only represents a tourist destination but also conveys the culture of local tradition. Gastronomic products grown and

served within the same region represent a culinary reflection of local life and culture, passed from generation to generation. This makes gastronomy a strategic tool for advancing the social and economic development of a destination, forming one of the core principles of slow food tourism.

**Table 7** Variety of dishes

			Country of origin		Total
			Serbia	Hungary	
Variety of dishes	3	Count	85	60	145
		% within Variety of dishes	58,6%	41,4%	100,0%
		% of Total	17,2%	12,2%	29,4%
	4	Count	99	86	185
		% within Variety of dishes	53,5%	46,5%	100,0%
		% of Total	20,1%	17,4%	37,5%
	5	Count	89	74	163
		% within Variety of dishes	54,6%	45,4%	100,0%
		% of Total	18,1%	15,0%	33,1%
Total		Count	273	220	493
		% within Variety of dishes	55,4%	44,6%	100,0%
		% of Total	55,4%	44,6%	100,0%

**Table 8** Pearson Chi-Square Test

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	,917 <sup>a</sup>	2	,632

Tab.9 presents respondents' views on the importance of Food presentation. The manner in which the tradition is presented to the respondents reflects both a high degree of national identity and national pride. Identification with this was seen among respondents of both restaurants as the highest ratings given for this category.

**Table 9** Food presentation

			Country of origin		Total
			Serbia	Hungary	
Food presentation	3	Count	71	67	138
		% within Food presentation	51,4%	48,6%	100,0%
		% of Total	14,4%	13,6%	28,0%
	4	Count	89	86	175
		% within Food presentation	50,9%	49,1%	100,0%
		% of Total	18,1%	17,4%	35,5%
	5	Count	113	67	180
		% within Food presentation	62,8%	37,2%	100,0%
		% of Total	22,9%	13,6%	36,5%
Total		Count	273	220	493
		% within Food presentation	55,4%	44,6%	100,0%
		% of Total	55,4%	44,6%	100,0%

Also, as in the previous answers, there is no statistical significance here either (Tab.10).

**Table 10. Pearson Chi-Square Teest**

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	6,298 <sup>a</sup>	2	,043

Slow food can enhance place attachment by bringing guests closer to the culture and heritage of a destination, enabling them to experience the unique authenticity of a region (Wang & Mattila, 2015). Increased visibility of food and drink within tourism strengthens the image of culinary heritage. For this reason, the overall experience guests had in both restaurants is particularly important. Based on data in Tab. 11, traditional food is very well presented in both establishments, contributing significantly to the general impression and the images created by slow food. No statistically significant differences were found between responses (Tab. 12).

**Table 11. Overall traditional meal experience**

		Country of origin		Total	
		Serbia	Hungary		
Overall traditional meal experience	3	Count	80	75	155
		% within Overall traditional meal experience	51,6%	48,4%	100,0%
		% of Total	16,2%	15,2%	31,4%
	4	Count	98	72	170
		% within Overall traditional meal experience	57,6%	42,4%	100,0%
		% of Total	19,9%	14,6%	34,5%
	5	Count	95	73	168
		% within Overall traditional meal experience	56,5%	43,5%	100,0%
		% of Total	19,3%	14,8%	34,1%
Total	Count	273	220	493	
	% within Overall traditional meal experience	55,4%	44,6%	100,0%	
	% of Total	55,4%	44,6%	100,0%	

**Table 12. Pearson Chi-Square Teest**

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1,336 <sup>a</sup>	2	,513

Perhaps the most important element of tradition and culture is the physical location of traditional restaurants (Grubor et al., 2022). It is crucial that the restaurant be situated in an integrated and authentic environment. This contributes to the positive ratings observed in Tab.13. Both restaurants are located in natural surroundings of the Pannonian Plain—a representative geographical area typical for both Vojvodina (Serbia) and Hungary (Tab.14). Rural destinations influence cortisol secretion, directly affecting stress levels. Combined with slow food imagery, this explains why such environments are increasingly important for the sustainable development of rural destinations.

**Table 13. Attractiveness of surroundings**

			Country of origin		Total
			Serbia	Hungary	
Attractiveness of surroundings	3	Count	70	63	133
		% within Attractiveness of surroundings	52,6%	47,4%	100,0%
		% of Total	14,2%	12,8%	27,0%
	4	Count	87	86	173
		% within Attractiveness of surroundings	50,3%	49,7%	100,0%
		% of Total	17,6%	17,4%	35,1%
	5	Count	116	71	187
		% within Attractiveness of surroundings	62,0%	38,0%	100,0%
		% of Total	23,5%	14,4%	37,9%
Total	Count	273	220	493	
	% within Attractiveness of surroundings	55,4%	44,6%	100,0%	
	% of Total	55,4%	44,6%	100,0%	

**Table 14. Pearson Chi-Square Teest**

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5,570 <sup>a</sup>	2	,062

The combined findings from descriptive statistics, ranking analysis, chi-square tests, and nonparametric effect-size estimation consistently indicate that respondents in both countries held uniformly positive perceptions of all elements associated with the slow food experience. Attributes linked to culinary authenticity, food quality, and experiential value were particularly highly evaluated, while operational aspects such as speed or standardization of service received relatively lower, but still favorable, assessments. Moreover, the negligible effect sizes obtained through Cliff’s delta confirm the absence of meaningful differences between Serbian and Hungarian respondents, suggesting that the slow food offer is perceived

in a comparable manner across both national contexts. Based on these results, the first sub-hypothesis (H1), which proposes that local food and beverages contribute positively to the development of rural destinations, is accepted. The second sub-hypothesis (H2), which states that sustainable food and beverage production supports the sustainable development of rural destinations, is likewise accepted. Finally, the main hypothesis (H)—that Slow Food represents a dimension associated with sustainable development in rural tourism in rural tourism and, consequently, the sustainable development of rural destinations—is formally accepted. These findings provide clear empirical confirmation of all three hypotheses and demonstrate the relevance of slow food as a strategic component of sustainable rural tourism development (Tab.15).

**Table 15** Summary of Hypothesis Testing Outcomes

Hypothesis	Statement	Methodological Basis	Outcome
H1	Local food and beverages positively contribute to the development of rural destinations.	Descriptive statistics; attribute ranking; chi-square tests; Cliff's delta	Accepted
H2	Sustainable food and beverage production positively influences the sustainable development of rural destinations.	Descriptive statistics; attribute ranking; chi-square tests; Cliff's delta	Accepted
H (Main Hypothesis)	Slow Food is a dimension that is associated with sustainable development in rural tourism and, consequently, in rural destinations.	Integrated interpretation of all analyses	Accepted

## CONCLUSION

A superficial success of gastro-tourism is increasingly visible: fine dining restaurants, wineries, and guesthouses attract visitors and generate income, transforming what were once small villages into thriving destinations. However, gastro-tourism can contribute to economic and cultural revitalization only when it is managed sensitively and responsibly, ensuring that it does not create new social or economic disparities. For this reason, policy-makers and community leaders **should work collaboratively** to develop tourism models that are both inclusive and sustainable, thereby **enhancing** long-term resilience in rural areas. Under such conditions, rural gastro-tourism **can function** not as a source of division but as a catalyst for positive social and economic change. While the findings clearly demonstrate strong guest appreciation for traditional, ingredient-based hospitality, these results do not allow for definitive causal claims regarding the broader sustainable development of rural destinations. Rather than indicating direct impact, the results suggest that slow food practices **may support** or **be associated with** sustainability-oriented processes in rural tourism.

The natural and anthropogenic resources present in rural regions of the Republic of Serbia, although valuable, are not sufficient on their own for the development of rural tourism. They do represent a form of competitive advantage, yet true competitiveness in tourism depends on the wise, long-term, and sustainable use of available resources. The findings of this study show that Hungary and Serbia possess almost equal attractiveness when slow food is taken into account. Distinctive and representative food products significantly enhance the overall gastronomic experience. Nonetheless, the conditions under which rural tourism operates in these two countries differ substantially. Because the empirical evidence derives from two case-study restaurants, the findings should be interpreted within the scope of context-specific gastronomic experiences. Broader generalizations to national-level rural tourism systems would require more extensive datasets and multi-site research designs. In Serbia, a major issue lies in the lack of cooperation between state authorities and local self-government units. This is further compounded by the absence of defined concepts and strategies for rural tourism development, the lack of incentive mechanisms (such as tax support), and deficiencies in legal regulations—including unclear categorization standards for rural tourism facilities. Numerous additional obstacles hinder the growth of rural tourism: inadequate tourist infrastructure and superstructure, poor public and transportation infrastructure, general disinterest among the rural population, insufficient environmental protection, and a workforce inadequately trained to meet tourism needs. Limited improvements make further development challenging. Additional structural problems include insufficient implementation of modern information and communication technologies, misallocation of resources, demographic decline and aging in rural areas, low education levels among households interested in tourism activities, and lack of involvement of key actors in preparatory measures preceding the tourist season.

Given that Hungary covers 93,030 km<sup>2</sup> and Serbia 88,499 km<sup>2</sup>, and considering that the number of registered rural households providing accommodation services in Hungary is double that in Serbia (1,052), it is clear that Serbia's efforts toward developing rural tourism are far from complete. Further research is required to better understand the evolution of rural tourism in Serbia, including both its strengths and weaknesses. Slow food has proven to be a highly effective developmental policy. It brings not only financial benefits but also cultural revitalization to rural societies. Many regions aspire to replicate the successful models found in destinations such as Tuscany and Provence, where economic benefits spread throughout the local community. Gastronomic tourism specifically responds to the growing demand for authentic culinary experiences and attracts visitors seeking local flavors in picturesque

landscapes. An increase in such visits may further stimulate investments in infrastructure, services, and agriculture, leading to broader regional development. Overall, the results of this study **support the view** that slow food represents a key dimension associated with the sustainable development of rural tourism and, consequently, **may contribute** to the sustainable development of rural destinations. Accordingly, the policy-related implications discussed in this study should be viewed as indicative rather than prescriptive. They highlight potential directions but cannot serve as comprehensive strategic recommendations without systematic destination-level evidence. Its implementation **appears to offer** both immediate and long-term opportunities for strengthening rural economies, preserving cultural heritage, and enhancing the overall attractiveness of rural areas.

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# **MOTIVATIONAL DRIVERS BEHIND HOTEL EMPLOYEES’ INTENTION TO STAY IN THE INDUSTRY: AN EXPECTANCY THEORY PERSPECTIVE WITH TECHNOLOGY SUPPORT AS A MODERATOR**

**Feri FERDIAN<sup>a,e</sup>, Mohd Salehuddin Mohd ZAHARI<sup>b</sup>, Vanica SERLY<sup>c</sup>, Hijriyantomi  
SUYUTHIE<sup>a,e</sup>, Hendri AZWAR<sup>a,e</sup>, Agariadne Dwinggo SAMALA<sup>d</sup>, Yudha Aditya  
FIANDRA<sup>d</sup>**

<sup>a</sup>Faculty of Tourism and Hospitality, Universitas Negeri Padang, Jl. Prof. Dr. Hamka Air Tawar, Padang 25131, Indonesia, feri\_ferdian@fpp.unp.ac.id (corresponding author), hsuyuthie@fpp.unp.ac.id, hendriazwar@fpp.unp.ac.id

<sup>b</sup>Faculty of Hospitality and Tourism Management, UCSI University, 1 Jalan UCSI, UCSI Heights (Taman Connaught), Cheras 56000, Kuala Lumpur, Malaysia, salehuddinm@ucsiuniversity.edu.my

<sup>c</sup>Faculty of Economics and Business, Universitas Negeri Padang, Jl. Prof. Dr. Hamka Air Tawar, Padang 25131, Indonesia, vanica.serly@fe.unp.ac.id

<sup>d</sup>Faculty of Engineering, Universitas Negeri Padang, Jl. Prof. Dr. Hamka Air Tawar, Padang 25131, Indonesia, agariadne@ft.unp.ac.id, yudhaaditya@unp.ac.id

<sup>e</sup>Research Center for Sustainable Tourism Development, Universitas Negeri Padang, Jl. Prof. Dr. Hamka Air Tawar, Padang 25131, Indonesia, feri\_ferdian@fpp.unp.ac.id (corresponding author), hsuyuthie@fpp.unp.ac.id, hendriazwar@fpp.unp.ac.id

\* corresponding author

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## **Abstract**

Anchored in Expectancy Theory of Motivation, this study investigates how expectancy, instrumentality, and valence influence hotel employees’ intention to stay in the industry, while assessing the moderating role of technology support. The research was conducted among operational employees of four- and five-star hotels across fourteen provinces in Indonesia, yielding 388 valid responses through purposive sampling. Data was collected using a structured questionnaire via online and analyzed via Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings demonstrate that all three motivational components; expectancy, instrumentality, and valence exert significant positive effects on employees’ intention to remain, reaffirming the robustness of expectancy theory within contemporary hospitality settings. These results suggest that employees are more inclined to stay when they perceive a clear link between effort and performance, trust that performance will lead to valued rewards and assign meaningful value to those outcomes. However, technology negatively moderates the relationship between expectancy and intention to stay, as well as between valence and intention to stay, indicating that technology-intensive environments may weaken certain motivational perceptions. In contrast, no significant moderating effect was observed in the instrumentality retention relationship. Collectively, the findings contribute theoretically by contextualizing expectancy theory in technology-driven workplaces and offer practical insights for hotel managers seeking to design balanced, human-centered retention strategies.

**Keywords:** Hospitality, Technology, Expectancy Theory, Motivation, Intention to Stay Working

## INTRODUCTION

Employee retention remains a key strategic issue in the hotel sector, where turnover not only inflates hiring costs but also disrupts service consistency and guest satisfaction (Dangaiso & Mukucha, 2024; Rabiul et al., 2025). Victor Vroom's expectancy theory offers a valuable framework for examining this challenge: it posits that motivation depends on three interrelated perceptions—expectancy, instrumentality, and valence—which guide behavioral choices and commitment (V. Vroom et al., 2015). Expectancy reflects an employee's belief that their effort will lead to successful performance (Khan et al., 2021). In the hotel context, where staff often face irregular schedules and multitasking demands, sustaining that belief is critical. When employees trust that working the extra shift or learning a new system will boost their performance, their motivation and job attachment strengthen. Instrumentality captures the perceived link between performance and outcome—whether excelling at one's job leads to tangible benefits like bonuses, promotions, or recognition (Joshi, 2025; Rai et al., 2025). Evidence from hotel-based models indicates that when staff perceive this link as clear and credible, their motivation stays high. Valence represents how much employees value the outcomes tied to their performance (Kalogiannidis et al., 2025). Research by Chiang and Jang (2008) demonstrated that valence carries both intrinsic and extrinsic dimensions, with intrinsic rewards such as self-worth and personal growth often exerting a stronger pull for hotel employees.

Chiang and Jang (2008) modified expectancy theory model, tested with 289 hotel employees, confirmed that both intrinsic instrumentality and intrinsic valence significantly shape work motivation, suggesting that financial perks alone cannot sustain retention. Given these insights, hoteliers are urged to foster meaningful rewards like career development paths and recognition programs that align with staff values, thereby fueling deeper emotional investment in the organization (Ali et al., 2025; Ferdian et al., 2022; Urme, 2023). Overloaded schedules, insufficient training, and minimal feedback can erode the belief that effort translates to good performance, weakening motivational dynamics (Baquero et al., 2025; Ferdian, 2021).

Similarly, unclear evaluation processes and opaque promotion criteria can shatter instrumentality. When employees doubt that hard work will be rewarded, their drive and intention to stay can diminish (Xu et al., 2022). Valence, being deeply personal, varies widely—some employees may prioritize pay, while others seek skill development or flexible work (Younies & Al-Tawil, 2021). Organizations must therefore tailor incentives and recognition

systems to align with individual motivations (Ginting et al., 2024). Beyond these motivational drivers, technology has emerged as a pivotal context in modern hospitality settings (H. Park et al., 2023). Tools like mobile check-in systems, digital scheduling platforms, and guest-service apps are increasingly integrated into daily workflows across hotels (Talukder, 2025).

Although substantial research explores employees' attitudes toward technology, far fewer studies examine how technology interacts with expectancy, instrumentality, and valence to shape retention. Technology support indicates that systems perceived as useful and easy to use enhance user engagement (Tavitiyaman et al., 2024). When applied to hotel employees, this implies that well-designed tools could reinforce their sense that effort produces results (Kirillova et al., 2020). Digital platforms also create opportunities to strengthen instrumentality (Kabadayi et al., 2022). If performance metrics like guest satisfaction ratings are tracked, made transparent, and directly linked to rewards, employees perceive a stronger performance outcome connection (Prentice et al., 2019). Moreover, digital tools can elevate valence by freeing employees from administrative burdens, enabling them to engage more with guests or enhance their skills activities may find more intrinsically rewarding (Hua et al., 2020). Thus, technology support may act as a moderator: amplifying the influence of expectancy, instrumentality, and valence on employees' intention to stay. When tech is accessible and supportive, the motivational chain may grow stronger.

Evidence in hotel literature supports similar moderating relationships. For instance, Chiang and Jang (2008) demonstrated how communication satisfaction strengthens expectancy effects on motivation, providing conceptual support for exploring technology moderation. However, empirical studies that explicitly model technology support as a moderator in expectancy driven retention remain scarce (Bakir et al., 2025). Most treat tech simply as an additional predictor rather than a catalyst that intensifies core motivational dynamics. Industry reports note productivity and efficiency gains from hotel technology yet rarely connect these to staff retention or motivational beliefs (Špindler, 2024). The individual psychological impact of tech solutions is still underexplored.

With hospitality increasingly embracing AI chatbots, automated housekeeping systems, and real-time performance dashboards, it becomes urgent to assess how these tools affect employee psychology in particular, whether they bolster or erode motivational components (Dasgupta & Jamader, 2024). Tailoring technology to reinforce employees' core motivational beliefs may offer managers a twofold win: operational efficiency and enhanced retention (Tavitiyaman et al., 2022). To address this gap, this article investigates how expectancy, instrumentality, and valence influence employees' intention to stay, and how technology

support modifies those relationships. We draw on expectancy theory foundation (V. Vroom et al., 2015), the applied hotel model by Chiang and Jang (2008) and technology insights regarding technology usability.

Through surveys capturing employees' perceptions of digital tools, motivational beliefs, and staying intent, we aim to offer a nuanced model where technology support acts as a situational amplifier of motivational forces. In doing so, we seek to refine expectancy theory's applicability in modern service settings and provide actionable guidance for hospitality managers investing in digital systems. If technology is implemented without regard for motivational dynamics, its benefits may be curtailed. Ultimately, understanding how technology support interacts with expectancy, instrumentality, and valence offers a path toward integrated retention strategies where psychological engagement and operational design work hand-in-hand.

## LITERATURE REVIEW

### **Intention to Stay Working in the Hotel Industry and Expectancy Theory Perspective**

Employee turnover remains a persistent issue in the hospitality field, particularly in hotels, where workforce instability frequently disrupts service consistency and operational efficiency (Chiang & Jang, 2008). Given this context, uncovering the key motivational elements that encourage employees to stay working in the hotel industry is essential. Expectancy Theory by Vroom (1964) offers a useful lens to explore this matter, presenting three interrelated concepts: expectancy, instrumentality, and valence that explain how individuals make decisions about their work effort based on expected outcomes.

Expectancy pertains to the belief that one's effort will result in successful job performance. In hotel environments, where roles often demand high levels of interaction, physical exertion, and multitasking, this belief becomes a critical factor. Employees are more likely to stay if they trust that their hard work will lead to effective performance and recognition. Clack (2021) noted that when employees perceive no relationship between their input and performance success, they become disengaged. Thus, fostering skill development through training and providing clear performance standards are strategies that enhance this belief and encourage retention. Kuslivan et al. (2010) further emphasize that employees who feel competent and prepared through training tend to remain longer in their roles. A study by Ford et al. (2023) also showed that when employees are supported by their organization and feel capable of performing their duties well, they are more likely to develop loyalty and stay in

their jobs. These findings lend empirical backing to the first hypothesis, which proposes that employees who perceive a strong link between effort and performance are more motivated to stay. Thus, we propose the following hypothesis:

*H1: Expectancy has a positive impact on the employee intention to stay working in the hotel industry*

Instrumentality refers to the perceived connection between performance outcomes and rewards. In the hospitality sector, where career advancement opportunities may be limited due to organizational hierarchies, this linkage is often ambiguous. When employees feel that their efforts will not result in tangible rewards like promotions or job stability, their motivation to remain diminishes (Chiang & Jang, 2008). Therefore, clarity in how rewards are tied to performance is essential. Research by Chen et al. (2023) illustrates that when hotels communicate reward systems transparently and outline clear career pathways, employee perceptions of instrumentality improve. Employees are more committed when they believe their performance will be fairly rewarded. These insights validate Hypothesis 2, reinforcing the idea that perceived performance-reward connections contribute significantly to an employee's decision to stay. Choi et al. (2024) also argue that the absence of clear instrumentality can lead to emotional burnout. When high performers see little reward for their effort, dissatisfaction rises, leading to higher turnover rates. This underlines the need for performance evaluation systems that not only acknowledge employee contributions but also reward them in a consistent and meaningful way. Thus, we formulate the following hypothesis:

*H2: Instrumentality has a positive impact on the employee intention to stay working in the hotel industry*

Valence reflects the personal value an employee places on the expected outcomes of their work. In hotel jobs, where compensation may not always match effort, the nature and attractiveness of rewards such as appreciation, growth prospects, or flexible hours play a pivotal role in shaping retention decisions (Zhu & Xie, 2023). Employees are more likely to stay if the benefits they receive align with what they personally value (Binu Raj, 2020). For example, while one employee may prioritize career growth, another may value flexible scheduling or recognition. Park and Hai (2024) suggest that when organizations fail to align rewards with what employees truly care about, the risk of turnover increases. Massingham and Tam (2015) provide further evidence by showing that personalized rewards those that

resonate with individual values have a significant impact on job satisfaction and employee commitment. Thus, Hypothesis 3 suggesting that when rewards are viewed as desirable, employees are more likely to remain. Demographic factors such as age, life stage, and cultural background also influence valence. Ayoobzadeh et al. (2024) observed that generational differences shape what rewards employees deem important while younger staff might pursue career progression, older employees may look for retirement benefits or work-life balance. Understanding these differences allows hotel managers to design reward structures that cater to diverse needs and improve retention. Thus, we propose the following hypothesis:

*H3: Valence has a positive impact on the employee intention to stay working in the hotel industry*

In conclusion, Expectancy Theory provides a compelling theoretical foundation for understanding why hotel employees choose to stay or leave. Each component expectancy, instrumentality, and valence offer unique insight into motivational forces driving employee behaviour. Organizations that recognize and nurture these dimensions are more likely to foster a loyal and engaged workforce. By creating a workplace environment where effort is supported, achievements are rewarded, and rewards align with employee values, hotels can address turnover more effectively. Expectancy Theory, therefore, serves not only as a theoretical guide but also as a practical tool for human resource management within the hospitality industry.

### **The Role of Technology Support as Moderator**

Employee retention remains a persistent challenge in the hotel industry, where frequent staff turnover and shifting work expectations continue to affect workforce stability (Chiang & Jang, 2008). Organizations in this sector are increasingly focused on identifying factors that motivate employees to stay. Vroom's Expectancy Theory by Vroom (1964) has been extensively applied to understand workplace motivation, emphasizing three core elements: expectancy (the belief that effort leads to performance), instrumentality (the belief that performance leads to outcomes), and valence (the value placed on outcomes). As hotel operations become more digitized, technology emerges as a key factor that may influence these motivational dynamics particularly by strengthening or moderating the link between motivation and employees' intent to remain.

Expectancy reflects an individual's perception that exerting effort will result in competent performance. In the fast-paced hotel environment, achieving performance targets is often

dependent on the availability of adequate tools and resources. Digital tools such as property management systems, scheduling software, and mobile applications can ease task execution and improve operational clarity, thereby increasing employee confidence (Yağmur et al., 2024). In this context, technological support may serve as a moderator that reinforces the relationship between effort and performance, potentially strengthening employees' intention to stay. Organizations that provide intuitive and supportive technology foster a more competent workforce. Hossain et al. (2025) reported that hospitality staff working with user-friendly systems felt more capable of meeting job demands, reinforcing their sense of control and efficiency. These observations support Hypothesis 4, which posits that when employees perceive high levels of technological support, the positive impact of expectancy on their retention intentions becomes more pronounced. Thus, we formulate the following hypothesis:

*H4: Technology support moderate significantly the influence of expectancy toward employee intention to stay working in the hotel industry*

Instrumentality is concerned with how strongly employees believe that successful performance will be recognized and rewarded. In modern hotel operations, this belief is often shaped by digital performance tracking and reward systems. Transparent digital platforms can clearly communicate how effort is linked to outcomes such as bonuses, promotions, or recognition, thereby enhancing instrumentality (Ma & Chen, 2025). Thus, technology has the potential to moderate this connection, improving its influence on employee commitment. Further support comes from Burnett and Lisk (2021), who found that digital appraisal tools that monitor performance in real time helped employees visualize the link between their contributions and rewards. When staff members trust that their efforts are being accurately tracked and fairly acknowledged, their motivation to remain with the organization improves. These findings back Hypothesis 5, suggesting that technology positively moderates the relationship between instrumentality and intention to stay. On the contrary, when organizations lack digital systems or rely on opaque evaluation processes, employees may struggle to see how their performance influences outcomes. This disconnect can lead to dissatisfaction or disengagement. Transparent, tech-based systems not only streamline HR practices but also promote fairness and accountability key components in retaining talent. Thus, we propose the following hypothesis:

*H5: Technology supports moderate significantly the influence of instrumentality toward employee intention to stay working in the hotel industry*

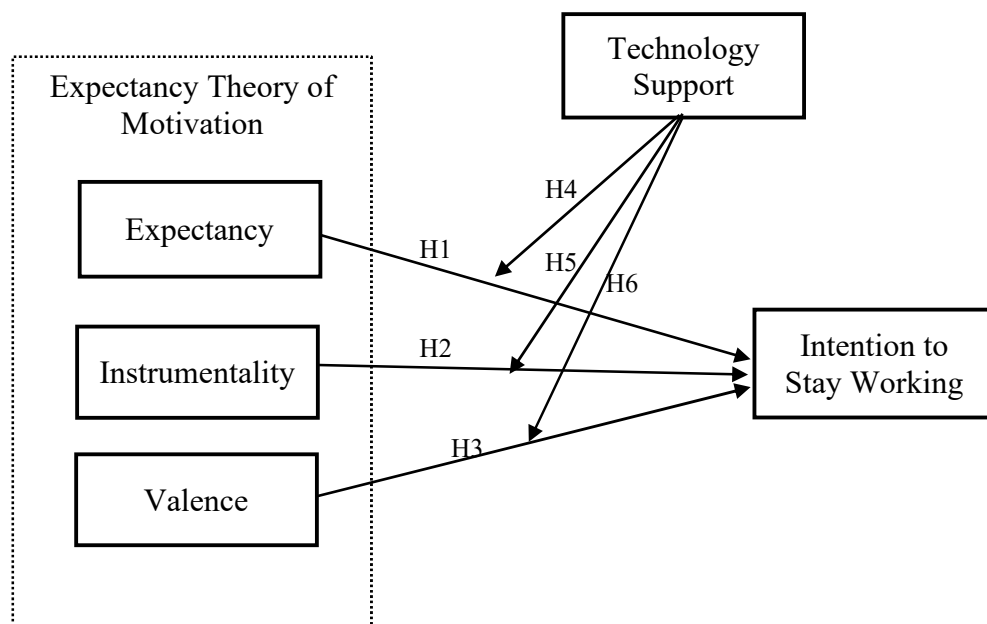
Valence refers to the perceived desirability of job-related outcomes. In hotel settings, technological tools can increase the attractiveness of these outcomes by offering customized rewards, digital learning paths, and flexible scheduling systems. Employees are more likely to remain in organizations that provide access to meaningful personal benefits and development opportunities through technology (Nguyen et al., 2023). In this sense, technology can enhance the perceived value of rewards, moderating the influence of valence on retention. Digital HR platforms also empower employees to manage their own career progress and access personalized benefits, which strengthens their perception of organizational support. Dhankhar and Singh (2023) found that when employees can interact with technology to chart their career development, they are more likely to view rewards as valuable and aligned with personal goals. This lends support to Hypothesis 6, affirming that technology enhances the connection between valence and the decision to stay employed. Thus, we propose the following hypothesis:

*H6: Technology supports moderate significantly the influence of valence toward employee intention to stay working in the hotel industry*

In addition, generational preferences play a role in how technology influences motivation. Younger workers, particularly Millennials and Generation Z, expect seamless digital integration in the workplace. When hospitality organizations meet these expectations through modern technology, employees are more likely to feel engaged and satisfied with their work environment (Sofi et al., 2025). This alignment between personal values and organizational offerings contributes significantly to retention. Overall, technology has transformed not only how hotels operate but also how they manage and support their workforce. As outlined by Expectancy Theory, the intention to remain employed is shaped by how employees perceive the connection between effort, performance, and rewards. When those perceptions are supported by appropriate technological tools, the resulting motivational effect can be significantly amplified. Understanding the role of technology as a moderator is crucial for hotel managers seeking to retain valuable employees in an increasingly digital workplace. By integrating systems that enhance clarity, fairness, and personalization, organizations can strengthen the motivational drivers of expectancy, instrumentality, and valence ultimately improving employee retention and long-term organizational performance.

Fig. 1 shows the conceptual model of the research.

**Figure 1** Research Model



Source: Authors.

## DATA AND METHODS

Aligned with the stated research objectives and questions, this study adopts a causal-associative research design to examine the predictive relationships among key motivational constructs. The primary dependent variable is employees' intention to remain in the hotel industry. The independent variables comprise the three core components of Expectancy Theory of Motivation: expectancy, instrumentality, and valence, each conceptualized as antecedents influencing retention intention. In addition, technology support is incorporated as a moderating variable to assess its conditional effect on the strength and direction of the relationships between the motivational constructs and employees' intention to stay. A quantitative cross-sectional design and purposive sampling was adopted with unit of analysis comprises operational employees from both front-of-the-house and back-of-the-house departments located in fourteen selected provinces. The inclusion of these provinces was strategically justified by regional variations in tourism intensity, levels of hotel development, labor market structures, and the extent of technological adoption within hotel operations. This approach enhances the contextual diversity and generalizability of the study's findings across Indonesia's heterogeneous hospitality landscape. Four- and five-star hotels were selected because they operate in highly standardized, performance-driven environments characterized by formalized human resource systems, structured reward mechanisms, and advanced technological integration. These upscale properties also experience intense service demands and competitive labor markets, making employee retention a critical managerial concern and

an appropriate context for testing expectancy theory and technology-related moderating effects.

The survey instrument was systematically structured into four distinct sections to ensure comprehensive and coherent data collection. All measurement items representing the constructs of interest were adapted from established prior studies to maintain theoretical consistency and content validity. Responses were captured using a seven-point Likert scale ranging from 1 (“strongly disagree”) to 5 (“strongly agree”). Prior to the main data collection, a pilot study was undertaken to evaluate the instrument’s reliability and construct validity. Human resource managers from eight four-star and eight five-star hotels across selected Indonesian provinces were contacted via telephone to obtain formal permission to survey operational employees. The managers were briefed regarding the study’s objectives and the purpose of the survey. Data were collected via online questionnaire administered through Google Forms. A total of 388 valid responses were obtained. The majority of respondents were male (217; 55.93%) and aged between 26 and 30 years (205; 52.84%). Most participants possessed higher education qualifications (293; 75.52%) and reported three to four years of work experience (184; 47.42%).

To examine the interrelationships among the research variables, Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed, consistent with the recommendations of Hair et al. (2021). Following the procedural guidelines of Ramayah et al. (2016) and Hair et al. (2021), the analysis was conducted using SmartPLS version 3.1.1. The evaluation proceeded in two stages: assessment of the measurement model to establish reliability and validity of the latent constructs, followed by examination of the structural model to test the hypothesized relationships between exogenous and endogenous variables.

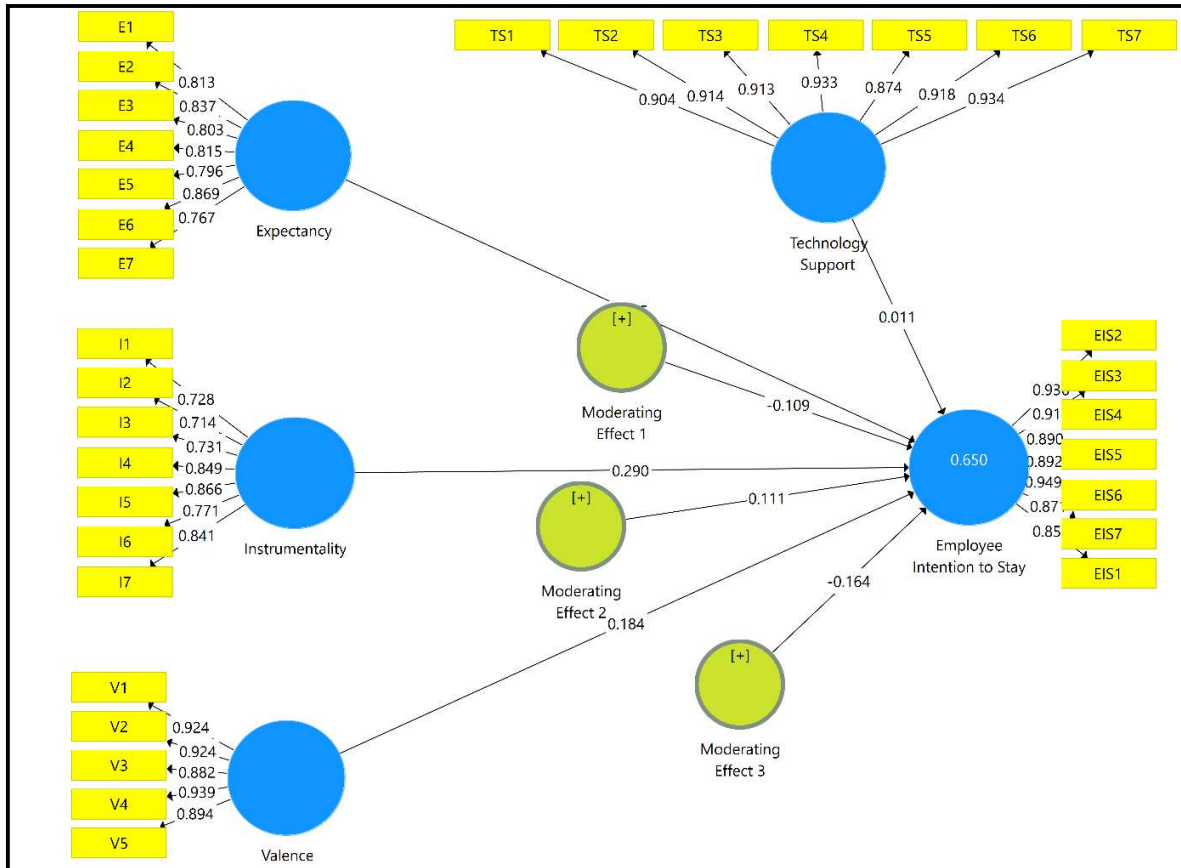
## RESULTS

### Measurement Model

The internal consistency, reliability, and convergent validity of the research model were examined using Composite Reliability (CR) and Average Variance Extracted (AVE). As presented in Table 1, all indicators demonstrated strong and statistically acceptable loadings, ranging from 0.714 to 0.939, onto their respective constructs, supporting the reliability of the measurement items. Furthermore, the AVE values confirmed that the model possessed adequate convergent validity. Specifically, Expectancy (0.664), Instrumentality (0.621), Valence (0.834), Technology Support (0.834), and Employee Intention to Stay (0.813) all

exceeded the commonly accepted threshold of 0.50. The structure of the measurement model is illustrated in Fig. 2, while Table 1 provides detailed factor loading information.

**Figure 2** Measurement Model



**Table 1** Measurement model assessment

Code	Item	Mean	S. D	Loadings	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
<b>Employee Intention to Stay</b>					<b>0.961</b>	<b>0.968</b>	<b>0.813</b>
EIS1	I feel a strong sense of fulfillment in my career within the hotel sector and intend to continue pursuing opportunities in this industry.	3.858	1.054	0.859			
EIS2	My professional plans include remaining in the hospitality field for the foreseeable future.	3.655	1.119	0.936			
EIS3	The career potential in the hotel industry	3.647	1.167	0.910			

Code	Item	Mean	S. D	Loadings	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
EIS4	appears promising, which positively influences my decision to stay. The fast-paced and stimulating nature of the hospitality environment motivates me to remain in this line of work.	3.948	0.946	0.890			
EIS5	Positive interactions and supportive relationships with team members and management enhance my desire to stay in the industry.	3.861	1.158	0.892			
EIS6	I recognize clear pathways for career development and advancement, which strengthen my commitment to staying in the hotel sector.	3.920	1.087	0.949			
EIS7	I choose to continue working in hospitality because I feel that its culture and values resonate with my own.	3.869	1.036	0.871			
<b>Technology Support</b>					<b>0.967</b>	<b>0.972</b>	<b>0.834</b>
TS1	The technology available at my workplace helps me complete tasks more efficiently.	3.675	1.083	0.904			
TS2	The hotel's technology systems support me in reaching my work goals.	3.912	0.962	0.914			
TS3	I feel well-trained and adequately prepared to operate the technology used in my workplace.	3.773	0.977	0.913			
TS4	Using technology at work has boosted my confidence in doing my job.	3.858	0.913	0.933			
TS5	I believe the technology support provided by	3.866	0.854	0.874			

Code	Item	Mean	S. D	Loadings	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
TS6	management has enhanced my job performance. Whenever I encounter technical issues, I receive prompt and effective assistance.	3.943	0.835	0.918			
TS7	The technology offered in my workplace encourages me to remain with the company for a longer period.	3.822	1.011	0.934			
<b>Expectancy</b>					<b>0.916</b>	<b>0.932</b>	<b>0.664</b>
E1	I'm confident that with full dedication, I can successfully complete the tasks assigned to me.	3.907	0.926	0.813			
E2	I trust that enhancing my skills and gaining more knowledge will support me in meeting work expectations.	4.026	0.876	0.837			
E3	I feel the company offers adequate support and resources that enable me to perform well.	4.178	0.778	0.803			
E4	I believe that consistent effort and hard work will lead to rewarding outcomes.	3.884	0.799	0.815			
E5	I'm confident that the training I receive from the company contributes positively to my job performance.	3.680	1.036	0.796			
E6	I feel that staying focused on my responsibilities allows me to meet the required standards.	3.778	1.014	0.869			
E7	I believe that when I seek assistance or direction, I will receive the help I need to complete my work efficiently.	4.026	0.799	0.767			

Code	Item	Mean	S. D	Loadings	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
<b>Instrumentality</b>					<b>0.900</b>	<b>0.919</b>	<b>0.621</b>
I1	I trust that strong performance is acknowledged and valued by the management.	4.034	0.764	0.728			
I2	I believe achieving my work goals can lead to receiving bonuses or other forms of reward.	3.946	0.790	0.714			
I3	I sense a clear link between how well I perform and the chances of being promoted.	4.039	0.838	0.731			
I4	I'm convinced that improving the quality of my work can contribute to greater job stability.	3.858	0.907	0.849			
I5	I believe consistent performance will be noticed through formal evaluations or official recognition.	3.879	0.866	0.866			
I6	I feel that the extra effort I put in will be met with fair and appropriate appreciation.	3.781	1.023	0.771			
I7	I'm confident that the contributions I make to the company will support my professional growth over time.	3.696	1.138	0.841			
<b>Valence</b>					<b>0.950</b>	<b>0.962</b>	<b>0.834</b>
V1	I truly appreciate the financial benefits, such as bonuses and salary raises, that reflect my performance.	3.809	1.112	0.924			
V2	Being acknowledged by management for the work I do means a great deal to me.	3.866	1.027	0.924			
V3	I see career advancement as a meaningful form of motivation.	3.923	0.949	0.882			
V4	I value the chance to	4.018	1.141	0.939			

Code	Item	Mean	S. D	Loadings	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
V5	learn and grow through the training opportunities provided by the company. Knowing that strong performance can lead to greater job security is one of my main drivers to give my best.	4.008	1.047	0.894			

**V6, V7 Item Removed**

N=388

According to Hair et al. (2021), outer loading values in this study were found to exceed the recommended minimum of 0.5, while composite reliability (CR) scores were all above the 0.7 benchmark. Similarly, the average variance extracted (AVE) values also surpassed the suggested threshold of 0.5, aligning with the standards set by (Hair et al., 2021). These findings indicate that the constructs demonstrate adequate convergent validity and internal consistency. Furthermore, to establish discriminant validity, Henseler et al. (2015) recommend that the Heterotrait-Monotrait ratio (HTMT) should remain below 0.90. As shown in Table 2, the HTMT values for all constructs fall within this acceptable range, confirming that the model satisfies the requirements for discriminant validity.

**Table 2** HTMT value

	Expectancy	Instrumentality	Valence	Technology Support	Employee Intention to Stay
Expectancy					
Instrumentality	0.885				
Valence	0.677	0.860			
Technology Support	0.778	0.887	0.83		
Employee Intention to Stay	0.732	0.795	0.73	0.721	

### Structural Model Assessment

The structural model was tested to evaluate the hypothesized relationships between the constructs through the analysis of path coefficients ( $\beta$  values) and their statistical significance (p-values). The results of this analysis are detailed in Table 3. As outlined by Hair et al. (2021), the model demonstrates a strong explanatory power, with an  $R^2$  value of 0.650,

indicating a substantial portion of the variance in employee’s intention to stay working in the hotel industry is explained by the model. A visual representation of the path analysis can be found in Fig. 2.

**Table 3** Path analysis

Hy pothes is	Path	Beta	Std Deviation	T Statisti cs	P Value s
H <sub>1</sub>	Expectancy -> Employee Intention to Stay	0.255	0.063	4.051	0.000
H <sub>2</sub>	Instrumentality -> Employee Intention to Stay	0.306	0.099	2.921	0.004
H <sub>3</sub>	Valence -> Employee Intention to Stay	0.175	0.064	2.860	0.004

Notes: R<sup>2</sup>=0.650 (Employee Intention to Stay Working), Q<sup>2</sup>=0.507 (Employee Intention to Stay Working),

Concerning the results table above, the path coefficient results show that expectancy ( $\beta=0.255$ ,  $T=4.051$ ), instrumentality ( $\beta=0.306$ ,  $T=2.921$ ), and valence ( $\beta=0.175$ ,  $T=2.860$ ) show a significant influence on employee intention to stay working in the hotel industry. These statistical results indicate that each element within the expectancy theory plays a meaningful role in shaping workers' motivation to continue their employment. The T-values for each variable surpass the conventional threshold, confirming the strength and reliability of these relationships. From these findings, it can be inferred that the motivational factors described in expectancy theory are crucial in retaining hotel employees. When employees believe that their efforts will lead to good performance (expectancy), that good performance will result in desirable outcomes (instrumentality), and that those outcomes are personally valuable (valence), they are more likely to remain with the organization. This suggests that hotels aiming to improve employee retention should pay close attention to how these psychological drivers are addressed in their management practices.

### Moderating Effects

The fourth, fifth, and sixth hypotheses (H<sub>4</sub>, H<sub>5</sub> and H<sub>6</sub>) explore whether technology support serves as a moderating variable in the relationship between expectancy, instrumentality, and valence, and employees’ intention to remain employed in the hotel sector. This inquiry is grounded in the theoretical perspective that technology support may influence how these motivational factors affect retention intentions. To assess the moderating role, the analysis utilized the SmartPLS moderation tool, applying the product indicator method as suggested by Hair et al. (2021). The moderation is considered significant if the interaction term shows a statistically meaningful path coefficient. The findings of this analysis are presented in Table 5.

**Table 5** Moderating effect of the technology support

Hypothesis	Path analysis	Beta	T Statistics	P Values	Result
H <sub>4</sub>	Expectancy + <i>Technology Support</i> -> Employee Intention to Stay Working in The Hotel Industry	-0.105	1.969	0.048	Significant
H <sub>5</sub>	Instrumentality + <i>Technology Support</i> -> Employee Intention to Stay Working in The Hotel Industry	0.095	1.116	0.265	Not Significant
H <sub>6</sub>	Valence + <i>Technology Support</i> -> Employee Intention to Stay Working in The Hotel Industry	-0.159	2.792	0.005	Significant

Notes: \*\*\*p<0.05

The findings indicate that technology support significantly weakens the relationship between expectancy and employees' intention to remain in the hotel industry ( $\beta = -0.105$ ), as well as the relationship between valence and intention to stay ( $\beta = -0.159$ ). These negative moderating effects suggest that, contrary to expectations, the presence of technology support may reduce the strength of the influence that expectancy and valence have on an employee's decision to stay. In other words, when technology support is perceived as high, the motivational impact of employees' expectations and the value they place on outcomes appears to diminish. On the other hand, the interaction between technology support and instrumentality did not yield a significant effect ( $\beta = 0.095$ ), indicating that technology support does not moderate the relationship between perceived outcome performance linkages and employees' intention to stay. This implies that, regardless of the level of technology support available, employees' belief that their performance will lead to specific outcomes remains unchanged in its influence on their retention intentions. Overall, the results highlight a nuanced role of technology support, which may not always enhance motivation as traditionally assumed.

## DISCUSSION

This study advances Expectancy Theory within the hospitality retention context by empirically examining the direct effects of expectancy, instrumentality, and valence on hotel employees' intention to stay, as well as the moderating role of technology support. The first hypothesis examined the influence of expectancy toward employee willingness to stay working in the hotel industry. Expectancy has a significant influence on employees' intention to stay working in the hotel industry, as it shapes their belief that their efforts will lead to

desired outcomes, such as career growth or job satisfaction. Expectancy theory suggests that when employees believe their hard work and performance will result in positive outcomes, whether in the form of promotions, recognition, or skill development, they are more likely to remain committed to their jobs. This is aligned with Doan et al. (2025) that hotel employees with high expectancy, meaning they believed their efforts would lead to tangible rewards, were more inclined to stay with their employer's long term. This is because a clear connection between effort and reward enhances job satisfaction, loyalty, and engagement, reducing turnover. Therefore, ensuring that employees perceive a strong link between their contributions and future success can significantly increase retention in the hotel industry.

On the second hypothesis, instrumentality has a significant influence on employees' willingness to stay working in the hotel industry, as it affects their perception of whether their performance leads to desirable outcomes such as rewards, promotions, or job security. In this sense, when employees believe that their efforts will result in meaningful rewards, they are more likely to remain committed to the organization. This finding strengthens Koo et al. (2020) study which found that hotel employees who perceived a strong link between their performance and tangible rewards such as bonuses, career advancement, or recognition, exhibited higher levels of job satisfaction and were less likely to consider leaving their jobs. This suggests that when instrumentality is clear and well-communicated, employees feel more valued and motivated, which enhances their willingness to stay with the company. Hence, fostering a performance-based reward system where employees can clearly see the benefits of their work plays a crucial role in retention.

The third hypothesis is supported when valence has a significant influence on employees' intention to stay working in the hotel industry, as it reflects the value employees place on the rewards they receive for their performance. This clearly denotes that employees perceive rewards such as promotions, bonuses, job satisfaction, or career development are highly desirable and align with their personal goals and values, they are more likely to remain with their employer. This finding corroborated well with Akgunduz et al. (2020) that hotel employees who attached high valence to both intrinsic rewards (e.g., meaningful work, job satisfaction) and extrinsic rewards (e.g., salary increases, promotions) demonstrated a stronger commitment to their organization and were less likely to seek employment elsewhere. This indicates that when rewards are perceived as valuable, employees can significantly increase job satisfaction and loyalty, leading to higher retention rates. Therefore, enhancing the perceived value of both financial and non-financial rewards is crucial in retaining employees in the hotel industry.

The fourth hypothesis shows that technology support negative significantly moderates the relationship between expectancy on employee intention to stay working in the hotel industry. Technology support serves as a negative moderator factor in the influence of expectancy on employees' intention to stay working in the hotel industry, as it shapes employees' perceptions of the likelihood that their efforts will lead to desirable outcomes. The finding provides an interesting contrast to much of the existing literature. Previous studies, such as those by Vroom (1964) and further supported by Chiang and Jang (2008) have emphasized that expectancy an individual's belief that effort will lead to performance is generally strengthened by organizational resources, including technology. However, the present study suggests that in certain contexts, particularly within the hotel industry, an overreliance on or the presence of technology systems may weaken the perceived link between effort and outcomes. This result may reflect a shift in how employees interpret technology support. As highlighted by Tavitiyaman et al. (2024), the success of technology implementation is not only determined by availability but also by user perception and integration into daily work processes. If employees feel that technology dominates or automates tasks to the point of reducing their individual contribution, it could undermine their sense of agency and personal efficacy. This aligns with findings of Rasool et al. (2022), who noted that technology overload can lead to stress and reduced motivation. Therefore, while technology support is often introduced with the intention of empowering employees, this study reveals that, without thoughtful implementation, it may unintentionally diminish the motivational power of expectancy.

The fifth hypothesis shows that technology insignificantly moderate the relationship between instrumentality on employee intention to stay working in the hotel industry. This finding implies that employees' belief performance will lead to specific rewards (instrumentality) operating independently of the level of technology support provided by the organization. While instrumentality has been widely recognized as a key predictor of employee motivation and retention (Chiang & Jang, 2008; Vroom, 1964), the lack of a moderating effect from technology support aligns with prior research suggesting that instrumental beliefs are shaped more by organizational fairness, clarity of reward systems, and trust in management than by tools or systems alone (Sharma et al., 2025). In hospitality settings, where interpersonal interactions and managerial recognition often carry more weight than system-driven outcomes, employees may rely more on personal assessments of performance-reward linkages than on technology enablers. Therefore, while technology may facilitate work processes, it may not significantly influence how employees perceive the

connection between their efforts and tangible outcomes reinforcing the idea that motivation tied to rewards is more relational than operational in nature.

The last hypotheses revealed that technology support serves as a moderating factor in the relationship between valence and the employees' intention to stay working in the hotel industry. The findings reveal a significant negative moderating effect, indicating that higher levels of technology support may weaken the influence of valence employees perceived value of outcomes on their intention to stay. This result suggests that when technology becomes a dominant part of the work environment, it may unintentionally reduce the motivational impact of desired rewards or outcomes. This finding diverges from the assumptions in classical expectancy theory (Vroom, 1964), where valence is expected to be strengthened when supported by adequate organizational tools and systems. However, study by Khlifaf et al. (2025), have shown that excessive or poorly integrated technology can lead to feelings of frustration, overload, or depersonalization, which may reduce the perceived value of rewards. In the context of the hotel industry, where personal recognition, team dynamics, and human interaction often contribute significantly to the perceived worth of outcomes, the presence of impersonal systems or automation may reduce emotional engagement with rewards. This aligns with findings by Debnath et al. (2025), who noted that technological environments could alter the emotional perception of job-related incentives, especially when they disrupt traditional human-centered work processes. Thus, while technology support is essential for operational efficiency, it must be balanced with strategies that maintain the personal and emotional relevance of workplace rewards.

## **STUDY IMPLICATION**

This study offers several important academic and theoretical implications for the advancement of Expectancy Theory within contemporary hospitality scholarship. First, the findings reaffirm the robustness and explanatory power of expectancy, instrumentality, and valence in predicting employees' intention to stay, thereby extending classical motivational theory into a high contact, service intensive context. By empirically validating these core components within four- and five-star hotel environments, the study strengthens the external validity of Expectancy Theory framework and substantiates its continued relevance in emerging Asian hospitality markets. More importantly, the identification of significant negative moderating effects of technology support on the expectancy retention and valence retention relationships introduces critical theoretical refinement. In technology, intensive hotel contexts such as AI

driven revenue management systems in sales and marketing departments, automated inventory control systems in kitchen operations, robotics-assisted room delivery services, and biometric attendance tracking in HR, the presence of advanced digital infrastructure may alter employees' perceptions of effort performance linkages. Contrary to traditional assumptions that organizational resources uniformly enhance motivational dynamics, the findings suggest boundary conditions under which technological infrastructure may attenuate, rather than amplify, core expectancy mechanisms. For instance, when housekeeping productivity is algorithmically monitored through real-time tracking dashboards, employees may perceive reduced personal discretion over performance outcomes. Similarly, automated guest-feedback analytics in front office operations may shift recognition from interpersonal acknowledgment to system generated ratings, weakening the valence of rewards. This challenges linear interpretations of resource-based reinforcement within expectancy theory and calls for a more nuanced, context sensitive conceptualization that incorporates socio technical complexity. Additionally, the non-significant moderation effect on instrumentality implies that performance reward contingencies remain fundamentally relational and justice driven, relatively insulated from technological intensity. Collectively, these findings contribute to motivational theory by integrating digitalization into a contingent structural force, thereby repositioning expectancy theory within technologically mediated service ecosystems and opening new avenues for theorizing employee cognition in AI augmented workplaces.

These empirical findings generate substantive managerial implications for operational hotel employees, hotel managers, and HR professionals operating in technology intensive hospitality environments. First, the significant positive effects of expectancy, instrumentality, and valence on employees' intention to stay signal that retention strategies must be operationally embedded rather than rhetorically communicated. For operational employees, particularly those in front of house and back of house departments, clarity of task expectations, access to structured training, and consistent supervisory feedback are critical levers. When employees perceive that effort reliably enhances performance, their psychological attachment to the organization strengthens. Thus, managers should institutionalize continuous skills upgrading, mentoring systems, and daily performance briefings that reinforce the effort performance linkage in tangible ways. Second, the strong role of instrumentality underscores the necessity for transparent performance contingent reward systems. For hotel managers, this implies moving beyond informal recognition toward data-informed yet human centered appraisal systems. Clear promotion pathways, visible criteria for bonuses, and structured career mapping should be communicated explicitly to

operational staff. HR professionals must ensure that evaluation mechanisms are perceived as procedurally fair and consistently applied across departments. In upscale hotels where hierarchies are pronounced, ambiguity regarding advancement opportunities may rapidly erode trust. Therefore, integrating structured succession planning and internal mobility programs can enhance employees' confidence that high performance yields meaningful returns. Third, the importance of valence indicates that reward systems must be differentiated rather than standardized. Operational employees vary in what they value financial incentives, flexible scheduling, professional development, or interpersonal recognition. HR practitioners should conduct periodic preference audits and deploy flexible benefits frameworks that align incentives with diverse workforce expectations. Tailored recognition initiatives, such as personalized development plans or cross-training opportunities, may enhance the perceived meaningfulness of organizational rewards.

Most critically, the negative moderating role of technology support demands strategic caution. While digital systems such as AI powered guest service chatbots, automated housekeeping dispatch systems, robotics assisted delivery, and real-time revenue optimization platforms enhance efficiency, excessive technological reliance may dilute employees' sense of personal agency and diminish the motivational salience of rewards. For managers, this necessitates a balanced digitalization strategy: technology in front office operations should augment guest interaction rather than replace interpersonal service recovery; kitchen automation should support chefs' craftsmanship rather than over standardize production; HR analytics should inform, but not substitute, relational leadership practices. HR professionals must complement system-based monitoring with human-centered supervision, ensuring that automation does not erode interpersonal engagement in departments such as F&B service teams or housekeeping units. User centered technology training, participatory implementation processes when introducing new PMS upgrades or robotics systems, and ongoing technical support are essential to prevent technology-induced disengagement. In sum, these findings suggest that sustainable retention in modern hotels requires an integrated approach where motivational architecture, relational management, and technological infrastructure are aligned to preserve human-centered service cultures while advancing operational excellence.

## **CONCLUSION**

In conclusion, the present study demonstrates that expectancy, instrumentality, and valence constitute significant determinants of employees' intention to remain within the hotel

industry. Consistent with motivational theory, employees are more inclined to sustain organizational commitment when they perceive a credible linkage between effort and performance, performance and rewards, and when those rewards are personally meaningful. However, technology support does not uniformly amplify these motivational pathways. Empirical evidence indicates that technology negatively moderates the relationships between expectancy and retention intention, as well as between valence and retention intention, suggesting that higher levels of technological support may attenuate the motivational salience of effort performance beliefs and the perceived desirability of outcomes. In contrast, technology support does not exert a significant moderating effect on the instrumentality retention relationship, implying that performance reward contingencies remain largely unaffected by technological intensity. Collectively, these findings underscore the nuanced and context dependent role of technology in shaping employee motivation and retention within contemporary hospitality environments. They suggest that technological resources, while operationally beneficial, must be strategically configured to reinforce rather than inadvertently dilute core motivational drivers

The findings of this study should be interpreted in light of several limitations. First, cross-sectional design restricts the ability to draw causal inferences regarding the relationships between expectancy, instrumentality, valence, technology support, and intention to stay. Future research could employ longitudinal or experimental designs to examine changes in motivational perceptions over time. Second, the study relied on purposive sampling of operational employees from four- and five-star hotels in Indonesia, which may limit generalizability to other hospitality segments, such as budget hotels or different cultural contexts. Comparative studies across countries or hotel categories are therefore recommended. Third, the exclusive use of self-reported survey data may introduce common method bias. Subsequent studies could incorporate multi source data, including supervisor assessments or objective retention records. Finally, future research may explore additional moderators, such as leadership style or organizational culture, to deepen understanding of motivational dynamics in technology driven hotel environments.

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## **DECODING THE SWEET SPOT OF CONSUMER SATISFACTION IN EASTERN AUSTRIAN WINE TOURISM**

**Petra PLATZ**<sup>a</sup>

<sup>a</sup>Széchenyi István University of Győr, Kautz Faculty of Economics, Department of Corporate Leadership and Marketing, +3696503400 platz@sze.hu

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### **Abstract**

This study investigates the pivotal role of experiential wine cellar visits in fortifying the applied marketing system of traditional wineries operating in North-Burgneerland, Austria; thereby contributing to the current discourse on Central European wine tourism and regional development. Drawing on the experiential marketing framework, the research examines how winery tours and tasting experiences can build customer loyalty, drive repeat purchases, and elevate brand image, all of which are critical for sustainable wine destination development. Using a netnographic approach, the study analyzed approximately 1,900 customer reviews harvested from the Vivino platform to rigorously assess the multidimensional nuances of the visitor experience. This analysis was anchored by the experiential marketing framework, focusing on the key dimensions of learning, recreation, and aesthetic pleasure. The empirical results demonstrate that co-creational aspects of knowledge transfer, specifically in the form of professionally assisted tours and structured cellar door experiences, make a significant contribution to overall visitor satisfaction. Crucially, the scenic "winescape"—the environmental and sensory qualities of the destination—alongside tailored entertainment offerings, were also found to play essential and synergistic roles in shaping the holistic customer experience. This evidence strongly reinforces the contemporary shift in wine tourism research, specifically relevant to Central European regional development, where the focus moves from the mere product to the comprehensive, integrated wine destination concept (as highlighted in recent *Deturope* research). The study also identifies practical challenges faced by Central European tourism providers, such as the imperative to differentiate unique offerings in a competitive market and address staffing issues. This work is looking to optimize the marketing strategies for family-owned wine businesses through experiential engagement, particularly concerning the effective development and promotion of the winescape in a cross-border Central European context.

Keywords: Wine Marketing, E-WOM, Marketing Strategy, Experiential Dimensions

### **INTRODUCTION**

In contemporary tourism scholarship, the focus has fundamentally shifted from viewing individual attractions in isolation to analyzing the complete destination experience (McCabe, 2024). For the wine industry, this shift is encapsulated by the concept of the "winescape," which recognizes that the value proposition of a winery extends far beyond the product in the bottle (Carlsen, 2006, Dressler & Paunovic, 2021). The winescape integrates the nature, folklore, culture, architecture and history of a touristic destination, positioning it as a complex product – service bundle (Kubát et al., 2022, 2023). This phenomenon is prevalent in the Central Europe: as its historical and cross-border nature of wine regions demands a

nuanced approach to regional development and marketing (Gyurkó & Gonda, 2024; Kubát et al., 2023). Wineries, especially the numerous family-owned enterprises, are crucial custodians of this winescape, embodying the unique natural and cultural values of their locale. Their on-site operations—specifically tours and tasting experiences—are not merely points of sale, but vital mechanisms for communicating the entire regional identity to the consumer. Consequently, the act of a visitor stepping onto a winery premises and participating in a tasting is an intentionally designed experiential encounter. While the immediate, short-term goal remains the commercialization of the product portfolio, the strategic significance lies in leveraging this experience to build long-term value. This practice is foundational to establishing customer involvement and, ultimately, loyalty (Joy et al., 2021, Pícha et al., 2025). Due to the changing business climate wineries – particularly market-competitive, traditional SMEs – develop sophisticated, forward-thinking marketing strategies to ensure their longevity. Academic literature has increasingly recognized that the conscious construction of a memorable visit contributes vastly to the successful survival of the wineries (Králiková et al., 2025). This is rooted in the Experiential Marketing Framework, which asserts that direct, multi-sensory engagement creates powerful synergies: converting a transient, single-instance leisure experience into sustained long-term relationships (Donavan & Stantic, 2024). A well-executed tour and tasting, therefore, strengthens the brand and offers a compelling opportunity for encouraging repeat purchase and re-visit behavior. The academic scrutiny of how these physical, direct experiences translate into strategic marketing outcomes is currently emerging (Thach & Charters, 2016; Novotná & Kunc, 2019). The literature confirms that the quality of these experiences, coupled with a positive brand image, demonstrates a fundamental correlation with customer loyalty (Indradewa & Riyanto, 2024, Joy et al., 2021; Juliana et al., 2025). As a complex, strategically relevant touchpoint, the winery visit requires careful design to ensure that the immediate experience always effectively points back to the wine product and its future purchase. The Lake Neusiedl region of Austria, with its unique geographical and climatic conditions, serves as an exemplary case study for Central European wine tourism. The region is characterized by a dense concentration of small and middle-sized family-run wineries that must effectively differentiate their experiential offerings in a competitive market. Furthermore, these regional SMEs grapple with operational obstacles, such as the widely reported difficulties in securing suitable staffing for specialized wine tourism roles (Kubíčková & Holešinská, 2021). Despite the consensus on the strategic importance of the experiential winery visit, a specific, holistic advisory framework remains absent. No existing study provides empirically-derived, granular

guidance on how exactly the key dimensions of the visitor experience—namely knowledge acquisition, entertainment, and aesthetic engagement—must be structured and delivered to reliably support the customer's return in the form of re-purchase or re-visit. Without tailored instruction, the capacity of wineries remains restricted. The goal of this research is therefore to advise the family-run wineries in the Lake Neusiedl region by systematically analyzing extensive consumer narratives (e-WOM) as follows:

- Isolate and quantify the contributions of educational, aesthetic, and entertainment dimensions to visitor satisfaction and perception of the winescape.
- Develop actionable recommendations for optimizing the winery visit as a strategic touchpoint for building long-term customer engagement and generating reliable re-purchases.
- Identify and illuminate common pitfalls and regional challenges (e.g., operational issues and market differentiation) to aid SMEs in creating a sustainable and profitable wine tourism model.

### **The Target Area: The Lake Neusiedl Wine Region in its Austrian Context**

The following description of the Austrian wine landscape and its structure, particularly the characteristics that define its quality and market position, is highly reliant on the strategic framework and data provided by the Austrian Wine Marketing Board (AWMB, 2023).

Austria is globally recognized for its high-quality, distinct wines, which are warmly welcomed by wine experts and wine lovers domestically and internationally. The national winemaking scene is overwhelmingly dominated by small and medium-sized family-run estates, with mass production playing only a minor role. Most wineries average a size of five hectares, resulting in high labour intensity and strict yield restrictions that position Austrian wines particularly well in the upper and premium price segments. This inherent focus on small, family-owned structures directly reinforces the rationale for this study, as these entities rely heavily on direct, experiential sales channels to compensate for minimal price competition at the entry-level (Wieschhoff, 2022). Furthermore, Austria is a world leader in environmentally friendly practices: no less than 21 per cent of its agricultural land and 13 per cent of its vineyards are managed in accordance with organic farming guidelines.

Of Austria's total vineyard area, approximately 13,300 hectares are located in Burgenland, in the north-eastern part of the country. Burgenland is unique within Austria because its production is predominantly dominated by red wines, differentiating it from other wine-growing regions. The region boasts five different wine appellations with clearly distinguished

profiles: Neusiedlersee DAC, Leithaberg DAC, Rosalia DAC, Mittelburgenland DAC, and Eisenberg DAC. Burgenland's cuisine, heavily influenced by its proximity to Hungary, also plays a crucial role in its wine marketing, emphasizing food and wine pairing.

The specific target of this study is the Lake Neusiedl (or Neusiedlersee) wine producer area is situated in the northeastern part of Burgenland. The region is highly competitive, home to 471 wineries, which are mostly handcrafted by local winemakers with close ties to their homeland (AWMB, Sieben Elemente, 2023). This intense, family-driven competition underscores the need for non-product differentiation, which is the core subject of this research: How do wineries leverage experiential tours and tastings to stand out in this crowded market?

The distinctiveness of the Lake Neusiedl region stems from several factors:

- Climate and Lake Influence: The dry continental Pannonian climate is the predominant force, especially along the eastern shores. The steppe lake itself is significant because of its unparalleled influence on the surrounding environment. It regulates temperatures, provides humidity, and creates ideal conditions for the development of grape varieties.
- Wines and Terroir: Besides Zweigelt, the region is internationally famous for its noble sweet wines from the Seewinkel area (Trockenbeerenauslese and Eiswein). The largely calcareous soils of the Leithagebirge hills, on the western side of the lake, provide an excellent home for both white Burgundies and the distinctive Blaufränkisch variety, Austria's most prominent red wine.
- Cultural Heritage: The transboundary region around Lake Neusiedl was admitted to the list of UNESCO Cultural World Heritage Sites in 2001, reinforcing the appeal of the area's Winescape (Cascio, 2025) and providing a unique aesthetic backdrop for the visitor experience.
- Winery Structure: Burgenland boasts a higher proportion of organic winemakers than the rest of Austria. The focus on quality, family legacy, and regional typicity confirms that the thriving of these wineries are inseparable from to their internal ability to communicate these unique attributes directly to the customer, primarily through experiential marketing efforts.

## **THEORETICAL BACKGROUND**

The present study is grounded in a robust theoretical framework that bridges the conceptualization of the physical wine setting with the psychological mechanisms of consumer experience and long-term loyalty. This foundation integrates three core areas of academic inquiry: the winescape from terroir to tourism destination, the experiential marketing framework including the „sweet spot” of flow, and the perception and integration of post-visit customer behavior shown in independent businesses.

### **The Winescape: From Terroir to Tourism Destination**

The contemporary understanding of wine consumption extends beyond the product itself to encompass the complex environment in which it is produced and presented. This integrated setting is captured by the term "winescape," which Kubát et al. (2023) define as the total sum of the environment and human interactions that enable the co-creation of the customer experience. The winescape is multiscalar. In its narrower context, the winescape is defined by the individual wine estate, where the producer fully manages the immediate service environment, or servicescape, to embed the customer experience within the regional atmosphere (Cascio, 2025). This concept highlights that the ultimate success of the Lake Neusiedl region, for instance, hinges not just on the quality of its DAC wines, but on the ability of its wineries to translate their unique local characteristics into a memorable and compelling physical experience. It is within this specific servicescape that the winescape can be consciously manipulated to encourage customer engagement and loyalty (Santos et al., 2020).

### **The Experiential Marketing Framework and the Sweet Spot of Flow**

To operationalize the winery visit, this study adopts the seminal Experiential Marketing Framework articulated by Pine and Gilmore (1998), which categorizes experiences into four dimensions—Entertainment, Education, Aesthetics, and Escapism—based on the consumer's participation (passive/active) and connection with the environment (absorption/immersion) (Haller et. al. 2021). While all four dimensions are present, wine tourism research has specialized their application:

Education has a specific, high-priority motivational factor, as customer are eager to familiarize themselves with wine, the production pathways and the terroir itself (Bekar & Benzergil, 2025). Activities such as formal wine tastings and vineyard tours fall under this realm. When education is smoothly integrated with entertainment, it creates "edutainment," enhancing both engagement and learning retention (Tomay & Tuboly, 2023).

Aesthetics is critical due to the sensory nature of wine consumption, as this dimension pertains to the visual appeal and atmosphere of the servicescape (e.g., lodging, architecture, and surrounding landscape), which directly targets the senses and influences the overall quality of the experience (Kladou et. al, 2024).

Entertainment (e.g., cellar concerts, demonstrations) and Escapism (e.g., active participation in blending or harvesting) provide the necessary diversity of in-situ experiences (Franceschini et. al., 2025). Optimal experiences, sometimes referred to as the "sweet spot"

(Terziyska, 2024), successfully blend these realms. This convergence helps consumers attain an optimal psychological "flow state" (Csikszentmihalyi, 2017), a state of deep focus and enjoyment that is crucial for ensuring the visit is not merely transactional, but a genuinely rewarding event that fosters a strong, positive brand association.

### **The Link to Post-Visit Behavior and SME Challenges**

The ultimate metric for the success of an experiential marketing strategy is its influence on post-visit consumer behavior. The direct experience is a powerful tool for generating two key strategic outcomes: brand evangelism and brand love generation, both of which fundamentally correlate with the brand image and positive emotional experiences (Joy et al., 2021). Winery visits, by offering a cluster of attractions and experiences, are essential for producers not just for immediate sales but for building this long-term loyalty (Ortega-Pérez et al., 2025). Research confirms that visitors' perceptions of wine tours and tastings form expectations that evolve over time (Hall et al., 2000). Crucially, future behaviors, such as re-purchasing or re-visiting, are demonstrably shaped by the satisfaction derived from previous experiential encounters (Mitchell & Hall, 2004, 2006). This established relationship highlights the cellar-door experience as the central point in a continuous cycle of pre-consumption phase, in-situ encounter, post-encounter behavior (Hall, 1996). This strategic necessity is intensified within the Central European wine tourism sector. The Lake Neusiedl region is characterized by small, family-run estates. These SMEs often face structural hurdles that complicate the delivery of a seamless experiential product (Kubičková & Holešinská, 2021). Primary challenges include:

- Differentiation: Many local wineries share similar advantages (tradition, terroir, organic focus), making it difficult to stand out beyond the Austrian Wine Marketing Board's generic branding (Wieschhoff, 2022, König et. al. 2022).
- Human Resources: A persistent challenge across German-speaking wine regions is the difficulty in securing competent, service-oriented staff who can perform the multi-faceted role of tour guide, wine professional, and salesperson simultaneously (Grechi et. al. , 2024, Průša et. al. 2025).

By using netnography to analyze extensive consumer narratives, this study aims to precisely identify which elements of the experiential framework (Education, Entertainment, Aesthetics) overcome these structural challenges and are most potent in driving the desired post-visit outcomes of re-purchase and loyalty.

## **Research question**

This study is designed to move beyond the descriptive analysis of wine tourism experiences toward establishing the predictive power of specific experiential dimensions on critical strategic marketing outcomes. The core logical twist introduced here shifts the focus from identifying the presence of experiential realms to quantifying the differential impact these realms have on converting a satisfied visitor into a loyal, repeat-purchasing customer. The overarching research objective is to empirically examine the direct and mediated relationships between the key components of the Pine and Gilmore (1998) model (namely Education, Aesthetics, and Entertainment) as perceived in the regional winescape. Like the ultimate strategic outcomes of customer loyalty and post-visit behavioral intentions (re-purchase and re-visit). The study's objectives are synthesized into the following Research Questions (RQs):

RQ1: The Core Driver: Edutainment and Knowledge Acquisition. The educational dimension, particularly when delivered as edutainment is often cited as a primary motivator for winery visits. To what extent does the Edutainment dimension of the winery visit, as perceived by consumers, significantly drive visitor satisfaction and perceived knowledge acquisition in North – Eastern Burgenland. This question tests the efficacy of knowledge-transfer strategies as a foundational element of the overall positive experience.

RQ2: Differential Impact: Aesthetics vs. Entertainment Wineries often invest heavily in both the physical setting (Aesthetics/Winescape) and organized social activities (Entertainment). This question seeks to compare their relative power in achieving loyalty. What is the differential predictive power of the Aesthetic (Winescape) dimension versus the Entertainment dimension in fostering customer loyalty (affective and cognitive) and the feeling of Escapism among winery visitors? This question moves beyond description to compare which element of the servicescape is the more efficient strategic investment for long-term customer bonding.

RQ3: The Strategic Link: Satisfaction as a Mediator The concept of the "sweet spot"—the optimal flow state—is academically understood as maximizing satisfaction. The real-world marketing value, however, lies in whether this satisfaction leads to future sales. To what extent does visitor satisfaction with the on-site experience (the proxy for reaching the "sweet spot") mediate the relationship between the three experiential dimensions and post-visit behavioral intentions (re-purchase and re-visit)? This question is central to the study, establishing the chain of causality.

RQ4: Actionable Strategy: Optimizing the SME Touchpoint The final objective is to translate theoretical findings into a practical guide for the target demographic. Based on the

analysis of consumer e-WOM narratives, what actionable, experience-design recommendations can be formulated to help family-run wineries differentiate their unique offerings and effectively, mitigate the documented operational challenges (e.g., staffing and competitive saturation) through optimized experiential marketing. This question provides the critical link back to the SME challenges outlined in the introduction, ensuring the findings are relevant and practical for the Lake Neusiedl regional context.

These questions move from isolating the key drivers (RQ1, RQ2) to modeling the strategic process (RQ3) and concluding with concrete, context-specific applications (RQ4), providing a comprehensive framework for both scholarly contribution and industry guidance.

## **DATA AND METHODS**

This study employed a netnographic approach to analyze Electronic Word-of-Mouth (e-WOM) data, allowing for an empirical, consumer-centric examination of experiential marketing success within the Lake Neusiedl region. This methodology is strongly supported in contemporary tourism and marketing research, particularly for its ability to capture rich, unfiltered narratives of complex service experiences (Gewinner, 2023; Terziyska, 2024). Netnography and e-WOM netnography, a specialized qualitative research technique adapted for digital environments, was chosen for its capacity to extract deep, context-rich insights from naturally occurring online communication. Recent academic work highlights the necessity of this approach for understanding modern consumer behavior, where digital opinions (e-WOM) significantly influence the decision-making process, destination image, and intent to visit or re-visit (Guerreiro et al., 2024., 2018; Zvaigzne et al., 2023). By analyzing e-WOM, this research directly taps into the unprompted perceptions that shape the post-visit behavioral outcomes (re-purchase and re-visit intention), which are central to the study's objectives (Juliana et al., 2023).

This study utilized Vivino, a specialized wine social network application with a global community of millions of users. This choice offers significant methodological advantages, like niche focus. Vivino provides a highly relevant data corpus where users are already self-selected wine enthusiasts, ensuring a higher level of product and experience knowledge in their critiques compared to general tourists (Wu & Liang, 2021; Terziyska, 2024). While Vivino's primary function is wine assessment, the platform's review structure often implicitly and explicitly captures the experiential aspects of the on-site visit, distinguishing it from broader platforms. Furthermore, crowdsourced Vivino ratings have been shown to correlate

substantially with professional critics' assessments, validating the platform as a reliable source of information on wine quality, which is a key driver of the overall experience (Kopsacheilis et al., 2024). Data collection was executed in March 2023, targeting all reviews pertaining to wineries located in the Lake Neusiedl District. Using the open-source data mining platform RapidMiner, a total of 1,895 customer reviews published between January and December 2022 were systematically scraped. The vast majority of the collected reviews were in German or Austrian German. This constraint ensures that the analyzed data accurately reflects the primary domestic and regional German-speaking tourist base (Austria, Germany, Switzerland, and expatriates), aligning the findings with the target market of the regional SMEs. The nuanced interpretation of German dialects, which often blend implicit opinions and fragmented expressions, was managed by the native-speaker researcher to ensure contextual reliability. To enhance data quality and reliability, the following filters were applied, mirroring best practices in netnographic research (Tandfonline, 2025). Only reviews submitted by verified users were included. Comments containing fewer than 150 characters were systematically excluded. This threshold was necessary to filter out superficial ratings and ensure that the remaining corpus contained sufficient textual depth for detailed content analysis of the complex experiential dimensions. While the reviews inherently lacked detailed demographic consumer profiles, limiting the ability for segmentation, this public, anonymized data collection adheres to ethical netnographic standards. The cleaned review corpus was subjected to a rigorous two-stage analytical process:

**Stage 1: Deductive Content Analysis (Qualitative Coding)** The qualitative core of the research involved a deductive content analysis using the Taguette platform. This method involved systematically classifying textual citations by sentence, assigning them to pre-defined thematic categories derived directly from the theoretical framework (Pine and Gilmore's Four Realms and the Winescape elements). This approach allowed for the construction of a detailed database where consumer narratives were categorized into groups based on thematic patterns, such as references to the "scenic view," "staff knowledge," or "cellar atmosphere." The qualitative coding was crucial for translating subjective textual descriptions into measurable variables.

**Stage 2: Statistical Validation (Quantitative Analysis)** To test the hypothesized relationships and establish the differential impact of the experiential dimensions (RQ1-RQ3), the frequency counts derived from the content analysis were subjected to quantitative statistical testing using SPSS in order to assess significant relationships between categorical variables (e.g., the presence of a strong "Aesthetic" mention and the overall rating/satisfaction

level). The other method was the comparison of proportions Z-test so as the Chi-square. It was utilized to validate the findings by comparing the proportion of mentions across different categories (e.g., comparing the frequency of positive mentions for "Edutainment" against "Entertainment") to determine which dimension exerts a statistically superior influence on the measured outcomes. This mixed-method approach – combining the depth of qualitative narrative analysis with the rigor of quantitative statistical validation – maximizes the strength of the findings, ensuring they are both rich in context and statistically significant.

## RESULTS

The analysis of approximately 1,900 e-WOM narratives from the Vivino platform reveals both the sources of experiential potency and the structural differentiation challenges confronting small and medium sized wineries all over North – Eastern Burgenland.

The "twist in the logic" presented here is that while visitors consistently reach a high level of satisfaction—the "sweet spot"—the specific elements driving this satisfaction point to a significant gap between functional marketing efforts and genuinely effective hedonic, emotional engagement. The visitor data provides a strong foundation for contextualizing the findings within the regional target market. The review demographics confirmed the study's focus on the local and regional audience: 48% of reviewers originated from Austria, and an additional 41% were from other German-speaking regions, primarily Germany and Switzerland. This concentration reinforces the validity of using Vivino as a data source for the Central European wine market (Kopsacheilis et al., 2024). The most prominent segments were couples (54%) and friends/social groups (26%), followed by families (12%) and solo travelers/business visitors (8%). The overall average rating was exceptionally high at 4.7 (SD = 0.5) on a five-point scale. This high consensus, while superficially positive, presents a critical methodological challenge: it confirms that the "sweet spot" of satisfaction is consistently achieved, but it simultaneously signals a pervasive lack of differentiation in the market. When all experiences are rated highly, none of them stand out as a true competitive advantage (Guerreiro et al., 2024). Crucially, the study found a high convergence of experiential intensity across the different segments (couples, friends, families, solo visitors), contradicting previous findings that distinct market segments emphasize different aspects of the experience (Brochado et al., 2021). The most significant divergence was noted between family and solo visitors, suggesting that while core experiential drivers are universal, the subtle operational changes required for family-friendliness versus solo engagement are where

differentiation truly occurs. The deductive content analysis revealed a distinct hierarchy of cited experiential dimensions, which exposes a potential functional investment trap for local SMEs. Knowledge acquisition, a key component of the experiential framework and a dominant motivational factor for visitors (Zhang & Lee, 2022), emerged as the most frequently cited attribute across all reviews. Business travelers (24%) cited this dimension most intensively, while couples (9%) cited it the least. Guided winery tours (with or without tasting) were the most effective vehicle for knowledge transfer, resonating most with business travelers (10%) and families (5%). Wine tastings, by allowing active, sensory participation, primarily resonated with couples (9%) and friends (6%). Information presented regarding brand identity—such as "organic/sustainable nature" or "generational narrative"—was highly frequent but also highly standardized across wineries. The study concludes that due to their overuse and lack of unique operational linkage, these concepts no longer serve as effective differentiators nor competitive advantages in this saturated regional market. Wineries are spending significant effort in functional education, yet the message is homogenized, creating a high level of functional engagement without an equal competitive payoff. Entertainment – defined as a passive yet absorbing experience that provides enjoyment – was the second most frequently cited dimension, consistently high across all segments: couples (48%), friends (45%), families (43%), solo travelers (40%), and business visitors (46%). The most significant finding within this dimension, which addresses the differential predictive power of experiential elements, is that entertainment narratives frequently contained the element of surprise—meaning the experience demonstrably exceeded the customer's expectations. This element of surprise was primarily linked to product excellence, public perception, and setting, making it the leading contributor in driving remarkable holistic service encounter. The highest intensity of this "surprise" element was reported by friends (27%) and couples (21%). This suggests that the true "sweet spot" of experiential marketing for loyalty is not found in the functional delivery of knowledge, but in the hedonic realm of Entertainment, where sensory and atmospheric quality lead to an unexpected, positive emotional outcome. Attributes related to traditional events, heritage, or artistic presentation received the lowest citation intensities, suggesting that large, cultural elements are less relevant than the personal, spontaneous interaction offered during ad-hoc winery tours and tastings (Dunning, & Zetzsche, 2025). This provides an actionable opportunity to standardize the process of spontaneous tours and tastings, turning them into highly efficient marketing programs.

The aesthetic dimension, linked to the sensory and environmental qualities of the visit, received the third-highest proportion of mentions, with high citation rates across all segments,

from business visitors (32%) to solo travelers (27%). "Landscape" was the most frequently cited attribute, validating the regional "winescape" as a critical baseline feature of the destination's appeal (Cascio, 2025). The beauty of the scenic views and rural charm are non-negotiable elements of visitor satisfaction. Despite the winescape's immersive qualities, mentions of Escapism (active, immersive participation to escape everyday life) were notably low, consistent with previous netnographic studies (Terziyska, 2024). This indicates that the vast potential of the physical environment is primarily utilized for passive enjoyment (Aesthetics) rather than active, loyalty-building immersion (Escapism). The dimension of Social Interactions was the least mentioned experience dimension across all visitor profiles, ranging from approximately 2%. This finding represents a dramatic contrast to contemporary literature which emphasizes that human interaction, particularly with winery staff or owners, is fundamental to establishing brand loyalty and differentiating a small business (Joy et al., 2021). The low incidence of mentions suggests a significant missed opportunity for family-run SMEs. Given the operational challenges faced by SMEs (Březinová & Skořepa, 2019), the high emotional and competitive value of personal interaction is not being realized. The few interactions that were mentioned primarily involved local residents, not the winery staff or owners, highlighting a deficit in leveraging personal connections for relationship marketing and subsequent post-visit loyalty.

In conclusion, this research empirically verifies that while high satisfaction (the "sweet spot") is common, the true engine for exceeding expectations and driving post-visit behavior is the hedonic surprise found in the Entertainment and Aesthetic dimensions, not the easily replicated functional knowledge transfer. The most critical actionable insight is the urgent need for family-run wineries to transition from generic educational content to leveraging their unique assets—the staff/owner personality and the unforgettable atmosphere—to create the kind of personal, social interaction currently absent from consumer narratives.

## **DISCUSSION**

The netnographic analysis of customer reviews from the Lake Neusiedl wine region strongly validates the experiential marketing framework, confirming that a holistic, multi-dimensional visit is crucial for generating positive e-WOM and securing brand equity for small, family-owned wineries. The observed visitor narratives confirm that the consumption of wine is inseparable from participating in the experience itself (Pine & Gilmore, 1998). Our results

identify three primary drivers of satisfaction that transform the physical product into a memorable experience: Knowledge, Aesthetics, and Entertainment.

The dimension of Knowledge—manifested through the depth of guided tours and technical explanations during tastings—is interpreted not merely as information transfer, but as a form of co-created value. Visitors express satisfaction when they feel they have gained authentic, proprietary insight into the family's winemaking philosophy and the unique characteristics of the Pannonian terroir. This educational success validates the high-quality, labour-intensive production methods of the family estates (Wieschhoff, 2022), providing a robust, non-price differentiator against the broader market. When this knowledge is delivered with passion, it triggers an emotional response that enhances Entertainment, moving the experience from a transaction to a shared narrative (Joy et al., 2021).

The second critical driver, Aesthetics, is primarily shaped by the winescape (Casco, 2025). Customer reviews frequently employ evocative language to describe the scenic backdrop of the Lake Neusiedl area and the historical ambiance of the cellars. This aesthetic experience serves as a physical anchoring mechanism for the wine's quality. In the digital realm, this translates into "digital terroir": the aesthetic appeal of the region becomes a reproducible, visual element in e-WOM narratives, further reinforcing the regional brand identity that the Burgenland DAC designation aims to convey. However, the success of this experiential model is constantly challenged by underlying operational constraints unique to this Central European context. The pervasive difficulty in finding suitable personnel—individuals who can seamlessly act as sommelier, tour guide, storyteller, and salesperson—represents a fundamental vulnerability (Průša et al., 2025). A breakdown in human service delivery immediately compromises all three experiential dimensions, demonstrating that the human factor, rather than the natural terroir or the wine itself, often represents the greatest risk to the winery brand's reputation and its e-WOM cycle.

## CONCLUSION

The primary theoretical benefit of this work supports the empirical validation of the experiential dimensions through netnography within the context of Central European regional development. By focusing on a niche market like Lake Neusiedl, this study provides granular evidence supporting the theoretical shift from wine tourism (product) to destination winescape (experience and place), a concept highly relevant to the regional focus of *Deturope* journal. Furthermore, the research specifically identifies the human capital gap as a critical bottleneck

in the experience economy supply chain, introducing a crucial operational caveat to established experiential models.

While providing significant insight, this study is bounded by a couple of limitations. The reliance on a single e-WOM platform (Vivino) primarily captures the perspective of German-speaking reviewers, limiting the generalizability of findings to broader international audiences. Since netnography exclusively analyzes user-generated text, the study inherently lacks crucial demographic data, preventing any correlation between experiential drivers and variables such as visitor age, income, or previous wine tourism experience. Finally, the analysis provides correlation, not causation; while we know which experiences drive positive e-WOM, we cannot directly quantify the resulting increase in sales or repeat visits.

### **Managerial Implications and Future Research**

The findings necessitate a strategic recalibration for small, family-owned wineries that currently prioritize grape quality over service delivery. The primary managerial implication is that the wine's perfection must be matched by the staff's execution. To overcome the staffing hurdle, wineries must adopt a concept of "digital staff training", utilizing augmented reality (AR) or internal video content to consistently teach storytelling techniques and product knowledge, thereby standardizing the experiential delivery across all employees. Furthermore, family-owners should shift from merely providing an experience to actively facilitating the co-creation of value. This means designing tasting spaces that encourage social interaction, photo opportunities, and personalized feedback, transforming customers into active brand co-authors who generate compelling e-WOM content, thereby making the customer the centerpiece of the marketing strategy (Martínez-Falcó et. al. 2025). A fresh twist lies in embracing the "phygital" reality: using the scenic physical setting to anchor high-quality digital content that can be easily shared, effectively turning the cellar into a live-action branding studio.

Based on the limitations, future research should embrace novel methodologies to advance the field. First, a quantitative, longitudinal study is urgently needed to directly correlate positive e-WOM sentiment (derived from platforms like Vivino) with tangible economic outcomes such as sales volume, loyalty club sign-ups, and cellar-door traffic. This requires a collaborative effort with the AWMB or regional wine associations to access sales data and move beyond qualitative interpretation. Second, given the criticality of the human element, future research should utilize qualitative methods (in-depth interviews) to explore the specific labor market challenges in the region, examining factors like seasonal work pressure, required

skill sets, and compensation models. Finally, a significant new twist would involve applying AI-driven sentiment analysis (Erdoğan et al., 2025) to e-WOM, not just to identify keywords, but to isolate and quantify the precise emotional tone (e.g., awe, joy, dissatisfaction) associated with specific experiential touchpoints (e.g., the first glass, the cellar tour, the checkout process), thereby providing wineries with real-time, emotionally intelligent data for operational optimization.

## SUMMARY

This research employs a netnographic approach to analyze authentic, unsolicited customer narratives. A data set consisting of almost 1,900 customer reviews related to wineries in the Lake Neusiedl region was collected from the global wine platform, Vivino. This methodology provides a transparent, ecologically valid assessment of the visitor experience, capturing spontaneous emotional and cognitive responses. The qualitative content analysis focused on identifying and quantifying recurring themes corresponding to established experiential dimensions: Knowledge Acquisition, Aesthetic Engagement, and Entertainment Value. The findings were then discussed in relation to the specific operational constraints of the Central European wine tourism environment.

The analysis confirms that the wine visit effectively acts as the "proof-of-concept" for the wine's premium value. Visitor satisfaction, and subsequent positive e-WOM, is primarily driven by the holistic delivery of the experience across three integrated dimensions:

**Knowledge Acquisition:** Educational depth, often facilitated by the winemaker themselves, is critical. Positive reviews repeatedly highlighted the value of gaining authentic, proprietary insight into the family's legacy and winemaking philosophy, transforming the experience into a form of "learning leisure" (Cascio, 2025) that justifies the high price point (Wieschhoff, 2022).

**Aesthetic Engagement:** The Winescape—the scenic backdrop of the UNESCO-protected Lake Neusiedl region and the unique ambiance of the tasting cellar—was found to be a powerful emotional anchor. This aesthetic appeal creates "digital terroir," providing visually compelling content that encourages and facilitates the generation of positive e-WOM and reinforces the destination's brand identity.

**Entertainment Value:** The personality of the host, the friendly, intimate atmosphere, and the feeling of personalization were identified as core elements of the hedonic experience. This

human interaction successfully converts the educational and aesthetic inputs into a memorable, emotionally resonant narrative (Juliana et al., 2025).

Crucially, the study identifies a significant challenge that acts as a major risk to brand reputation: the difficulty in securing high-quality human capital. The demand for staff to seamlessly perform as sommelier, storyteller, and salesperson simultaneously creates an operational bottleneck that, when poorly managed, generates negative e-WOM that instantly undermines the positive value of the product and the setting.

The study concludes that the success of marketing strategies in the Lake Neusiedl region is fundamentally linked to the wineries' ability to perfectly execute an integrated, high-quality experience. The findings provide both a theoretical contribution by validating the experiential model within the niche Central European context (Gyurkó & Gonda, 2024), and an operational contribution by identifying the human capital gap as the primary weakness in the experiential tourism supply chain.

For Managerial Implications, wineries must strategically shift their focus:

- Prioritize Staff Execution: Investment in staff training—potentially utilizing "phygital" tools like augmented reality or video training—must be viewed as a marketing investment, ensuring standardized delivery of the brand narrative.
- Facilitate Value Co-Creation: Wineries should move beyond traditional hosting to design tasting spaces that actively encourage visitors to create and share their own e-WOM content, effectively turning the customer into a co-author of the brand's story.
- Manage the Digital Terroir: Actively monitor e-WOM platforms to address negative feedback immediately, thereby mitigating the risk posed by service failures and protecting the aesthetic appeal of the region's unique winescape.

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## **ACCESSIBLE TOURISM IN CENTRAL-EASTERN EUROPE – THE PRESENT SITUATION AND DEVELOPMENT POSSIBILITIES**

**Zoltán RAFFAY<sup>a,b</sup>**

<sup>a</sup>Associate professor, University of Pécs, Faculty of Business and Economics, Department of Marketing and Tourism, Pécs, Hungary; ORCID number: 0000-0001-6546-9633; phone: +36 20 9290723, e-mail address: raffayz@ktk.pte.hu; corresponding author

<sup>b</sup>Associate professor, Constantin the Philosopher University in Nitra, Faculty of Central European Studies, Department of Tourism, Nitra, Slovakia, e-mail address: zraffay@ukf.sk

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### **Abstract**

Approximately 15% of the world's population live with some form of disability, and this proportion is expected to rise in the future. Despite undoubted progress in recent decades, the participation of people with physical, organoleptic, intellectual etc. disabilities in tourism is often blocked by different mental, physical, organisational etc. barriers, or the lack of interest and attention on the part of tourism service providers, even in countries with a relatively high level of socio-economic development, and so the tourism sector is losing a significant economic opportunity, as accessibility is opening up a potential new customer base. Based on the findings in international and Central-Eastern European literature, the results of international studies and research, including statistical data from a recent four-country survey in Central-Eastern Europe, the paper demonstrates the achievements of accessible (or inclusive) tourism so far and outlines some possible solutions for making the tourism sector more inclusive. It also proves that the increased inclusion of people with disabilities is a largely untapped economic opportunity, and also a moral obligation of the majority societies. The overall conclusion of the paper is that accessible tourism may improve the performance of tourism by the inclusion of a large and until now largely unutilised segment, provided that more attention is paid to their special needs and the provision of accessibility becomes a mainstream attitude in the tourism industry.

Keywords: accessibility, disabilities, inclusive tourism, sensitisation, Central-Eastern Europe, Hungary.

### **INTRODUCTION: THE SIGNIFICANCE OF ACCESSIBLE TOURISM**

It is a widely accepted fact that tourism is one of the most dynamically developing sectors of the world's economy and a phenomenon that now concerns a major part of the planet's population ("total tourism", see Michalkó, 2023). However, despite the seemingly (over-)saturated market and the more and more frequently mentioned phenomenon of overtourism (Milano, Novelli & Cheer, 2019; Vagena 2021), there are still significant reserves in the further growth of the tourism sector, one of which is people with disabilities (PwD). The participation of this target group in tourism is much underrepresented compared to their share from the population, even in advanced economies with relatively well-functioning social

services and tourism sector, not to mention the countries with less developed economies or the third world countries.

The World Health Organization (WHO) defines disabilities as follows: “Disabilities is an umbrella term, covering impairments, activity limitations, and participation restrictions. An impairment is a problem in body function or structure; an activity limitation is a difficulty encountered by an individual in executing a task or action; while a participation restriction is a problem experienced by an individual in involvement in life situations.” (<https://www.emro.who.int>, 2025)

According to the Center for Disease Control and Prevention, the national public health agency of the United States, a disability is any condition of the body or mind (impairment) that makes it more difficult for the person with the condition to do certain activities (activity limitation) and interact with the world around them (participation restrictions), and the following forms of disabilities exist: vision; movement; thinking; remembering; learning; communicating; hearing; mental health; and social relationships (Center for Disease Control and Prevention, 2025).

We can be affected by this issue at any time, just think of our advancing age (but an accident can also make someone permanently disabled at any time). Special needs occur in older age for everyone, but there are also many other situations in life that can give rise to special needs: e.g. undergoing rehabilitation after an accident, having young children (Darcy & Dickson, 2009), being pregnant women or parents pushing a pram etc.

There are a number of situations, circumstances and health challenges which can put the “owner” in the category of disabled: obesity or chronic illness such as asthma or diabetes or live with food intolerances are all problems that may prevent them from participating in certain tourist activities requiring substantial physical effort. Some authors classify people with allergies as Pwd (Zsarnóczy, 2018).

The number of Pwd is expected to increase in the coming decades, due to factors like the increase in life expectancy – people live longer than they did generations ago, and reaching old age typically leads to locomotory, sensory etc. disabilities; and the fact that the development of medical services allows more infants born with disabilities to stay alive, and they (and their families) may become a new target group of tourism in a few years. Also, if we consider the growing number and proportion of people with chronic health conditions, allergies, food intolerances, the growth in the number of people in need of accessibility including accessible tourism services, will rise in the coming decades (Schiefert & Matteucci 2018).

The economic benefits that Pwd may mean for tourism are as follows:

- the Baby Boomer generation is now in the retirement age, and they will be much more active participants in tourism than the previous generations were;
- new technologies open up greater opportunities for Pwd;
- many Pwd have to travel with (an) assisting person(s), so the inclusion of one disabled person in tourism actually leads to the inclusion of more than one person in many of the cases.

Despite these evident facts and figures, the access of Pwd to tourism services (especially, but not limited to, travel services and accommodations) is often problematic, seriously restricting their possibilities to participate in the “beatific” travel experience (Michalkó, 2010), in the worst case excluding them from travelling, leaving them no other choice than to stay out of travel completely, in the fear that inaccessible services would make their travel impossible (Gonda & Raffay, 2021). Evidence suggests that it is (public) transportation and the access to tourist attractions that poses the main barriers to the travels of Pwd (Gonda & Raffay, 2021; Csapó et al., 2025).

## **THEORETICAL BACKGROUNDS**

Historically, “accessibility” appeared in tourism research with Smith’s (1987) conceptual work on barriers to leisure participation – intrinsic, environmental and interactive – followed by early use of the label “Accessible Tourism” in the English Tourism Council report “Tourism for all” (Baker, 1989). Fieldwork-based studies in the 1990s, influenced by the Social Model, examined market value and barriers for Pwd and highlighted transport accessibility (Darcy & Daruwalla, 1999; Darcy, 2002).

Accessible Tourism initially referred to the removal of barriers that prevent people with impairments from fully enjoying tourism experiences (Buhalis & Darcy, 2012). Over the years it has evolved into a broader process of reshaping the – physical, informational, online and attitudinal – tourism environment on the basis of the principles of universal design, so that destinations and services can be used by all people regardless of age, condition, capacity or impairment (Buhalis & Darcy, 2012; Buhalis & Michopoulou, 2011; UNWTO, 2016). The rise of accessible tourism is linked to two major shifts in postmodern/post-industrial societies: (1) new democratic and identity values that reframed disability and placed the social “normalisation” of Pwd on the public agenda; and (2) the progressive “cultural normalisation” of tourism, as rising affluence and welfare-state measures transformed tourism from an elite

activity into a widely affordable aspiration among working and middle classes (Rubio-Escuderos, García-Andreu & de la Ros, 2021). A further stage of this trajectory is the recognition of tourism as a universal right. Two documents basically influencing the development of tourism impacted accessible tourism: the declaration of the Manila Conference (1980) affirmed the right to tourism as part of human fulfilment, emphasising the „right to access to holidays and to freedom of travel and tourism” in general and implicitly mentioning Pwd in social tourism as “an objective which society must pursue in the interest of those citizens who are least privileged in the exercise of their right to rest” (UNWTO, 1980), and UNWTO’s Global Code of Ethics for Tourism that explicitly encouraged and facilitated tourism for Pwd in Art. 7(4): “Family, youth, student and senior tourism and tourism for Pwd, should be encouraged and facilitated” (UNWTO, 1999).

As a scholarly field, accessible tourism emerged at the intersection of tourism studies and disability studies (Rubio-Escuderos, García-Andreu & de la Ros, 2021), yet, despite increased recognition, research remains comparatively young and substantial work is still required to understand and advance accessibility across destinations (Darcy & Dickson, 2009; McKercher & Darcy, 2018). The contemporary relevance of accessible tourism is strongly shaped by the shift from medicalised interpretations of disability to social and multidimensional approaches, which emphasise that many travel limitations arise because destinations and firms are not prepared to meet diverse access needs (Darcy & Buhalis, 2011). Tourism is associated with well-being and happiness, supporting arguments that the rights of PwD to enjoy leisure and travel on equal terms should be recognised. Accessible tourism is increasingly framed as both a development strategy for destinations and enterprises and a growing issue for public welfare programmes, as expectations of entitlement rise (Buhalis & Darcy, 2010; Buhalis & Michopoulou, 2011).

From 2000 onwards, accessible tourism gained momentum in high-impact periodicals, with largely exploratory qualitative designs and pilot quantitative surveys on behaviours, motivations, experiences, barriers, travel-agent perceptions and accessibility priorities: key findings included segmentation by severity of impairment (Burnet & Baker, 2001), motivations such as outdoor activity and sport, novelty, relaxation and freedom (Shaw & Coles, 2004), and the disproportionate burden of accessibility deficits in accommodation and transport (Daniels, Rodgers & Wiggins, 2005). Research also noted financial constraints and reliance on budget packages (Shaw & Coles, 2004), careful pre-trip information gathering (Ray & Ryder, 2003), scepticism towards traditional travel agents (McKercher, Packer, Yau

& Lam, 2003), and strong well-being effects – positive trips can enhance confidence, while negative experiences can deter future travel (Yau, McKercher & Packer, 2004).

A notable institutional development was the establishment of ENAT (European Network for Accessible Tourism) in 2006 and the subsequent OSSATE Report reviewing accessibility information systems across EU member states (ENAT, 2019). For 2007–2019, two edited volumes became core references: *Accessible tourism: Concepts and issues* (Buhalis & Darcy, 2010) and *Best practices in accessible tourism* (Buhalis, Darcy & Ambrose, 2012). Over time, exploratory work declined relative to specialised studies; experimental approaches became more common; and theories from other fields (e.g., destination competitiveness, value co-creation, learned helplessness) were increasingly applied. Research broadened across five thematic clusters: (1) experiences and motivations, increasingly integrating biopsychosocial perspectives – e.g., learned helplessness as a mediating mechanism in barrier effects (Lee, Agarwal & Kim, 2012), health perception shaping participation (Pagán, 2012), and strategies used by blind tourists to overcome constraints through individual, interpersonal and structural resources (Devile & Kastenholtz, 2018); studies also highlighted escape from “objects of care” roles (Blichfeldt & Nicolaisen, 2011), social integration and identity benefits (Kastenholtz, Eusébio & Figueiredo, 2015), and problematic travel segments such as flying (Poria, Reichel & Brandt, 2010); (2) technological accessibility needs, focusing on ICTs, online information quality and assistive-technology compatibility, with calls for detailed, format-accessible information and systems supporting filtering, personalisation, interoperability and route-level accessibility mapping (Buhalis & Michopoulou, 2011; Darcy, 2010); early work suggests social media can expand knowledge sharing and raise awareness (Altinay, Saner, Bahçelerli & Altinay, 2016); (3) market strategy studies, emphasising heterogeneity by type and degree of impairment (Buhalis & Michopoulou, 2011), with accommodation accessibility as a dominant satisfaction driver and willingness-to-pay factor (Darcy, 2010; Lyu, 2017), and comparative competitiveness analyses between countries (Vila, Darcy & González, 2015); (4) industry attitudes, where firms often improve accessibility primarily to comply with legislation rather than to pursue opportunity, with persistent misconceptions and limited stakeholder collaboration (Darcy & Pegg, 2011; Nyanjom, Boxall & Slaven, 2018); and (5) foresight, which frames accessible tourism implementation as requiring social change, multi-stakeholder alignment and long-term planning, including links to sustainability and lifecycle functionality – arguing Universal Design can support

operations, reduce costs, advance equality and strengthen sustainability (Michopoulou, Darcy, Ambrose & Buhalis, 2015).

Rubio-Escuderos, García-Andreu & de la Ros (2021) identify two central limitations in accessible tourism research. First, methodological constraints: small qualitative samples often recruited through Pwd associations and convenience/snowball methods, reflecting “hard-to-reach” population challenges and the invisibility of many impairments, with many surveys therefore conducted online (e.g. Buhalis, Darcy & Ambrose, 2005; Darcy & Buhalis, 2011). Broader random, census-based or stratified approaches could reduce bias and enable comparisons across socio-demographics. Second, conceptual complexity: disability is diverse and socially contingent, and studies need sharper scoping to assess the relative weight of contextual factors for specific impairment types. Intellectual and hidden impairments remain under-studied, representing a major gap.

There is substantial literature on accessible tourism from the four countries of the questionnaire survey in the empirical part of the paper: Croatia, Hungary, Poland and Romania as well, clarifying the current state of accessible tourism research in Central-Eastern European contexts. Across all four cases, a recurring conclusion is that policy attention and market rhetoric have grown faster than systematic academic evidence, while research – if exists – identifies accessibility as a multidimensional issue spanning physical/technical infrastructure, information provision, staff competences and attitudinal barriers.

In Croatia, the international-language research base is both recent and relatively small, with the reviewed corpus concentrated after 2019. Several studies nevertheless provide clear signals about demand, supply gaps and governance. Gonda (2021), drawing on a survey conducted in Hungary and comparing results with Germany, Italy, Spain and Croatia, reports that Pwd strongly support inclusion policies and travel more frequently than the overall population, implying that tourism stakeholders have a substantive incentive to engage with this segment. However, because Croatia is only one of several comparative markets and the Croatian subsample is small, the author cautions against generalisation. By contrast, Gregoric, Skryl & Drk (2019) use a representative sample to diagnose a broad need to adapt tourism facilities, arguing that travellers with disabilities seek equal participation but are frequently restricted by inadequate provision. Their recommendations are operational and governance-oriented: destination management planning, the development of forms of tourism aligned with diverse impairment types, cross-sector collaboration (health facilities, tourism communities, family businesses, small enterprises and renters), the removal of “mental barriers”, and staff

training. Pókó (2022) further frames accessible tourism as a rapidly expanding market segment and, through exploratory work in Hungary and Croatia, foregrounds the lived difficulties encountered during travel. The paper stresses the value of reliable cross-border information infrastructure – especially an online database of accessible facilities and trips in neighbouring Croatia and Hungary – alongside mainstream products and programmes (gastronomy, concerts, sports) designed to be inclusive without being segregated, and improved online information to encourage nature-based and even extreme-sport participation where feasible and safe.

Croatian studies also highlight the role of local governments and the importance of mobility and interpretation in destination accessibility. Popović, Slivar & Gonan Božac (2022) emphasise that accessible tourism extends beyond mobility to include intellectual, mental, visual, speech and hearing impairments, as well as conditions such as stroke. Focusing on five major Istrian destinations, they assess municipal planning documents, organisational activities, project participation and coordination practices, finding that none of the units studied has a dedicated programme for equalising opportunities for Pwd: accessibility measures are partial elements within broader strategies and plans, with some from earlier planning periods. While the study does not directly sample Pwd, it adds a valuable governance lens by demonstrating how accessibility can be normalised within “responsible” tourism policy and linked to revenue generation for accessible destinations. Relatedly, Škaja, Bašić, Vuk, Stiperski & Horvat (2019) adopt a participatory methodology with power wheelchair users to map physical barriers and street navigability in Zagreb, producing accessibility maps and an interactive online GIS tool, and proposing further methodological refinement and a mobile application to support route planning. Their work underscores transport as a decisive factor in destination choice (also implied by Gonda, 2021) and positions navigational tools as a bridge between urban accessibility and tourism participation. Finally, Tubic, Vidak & Kovacevic (2022) examine interpretive tools and assistive technologies within Croatian national parks via in-depth interviews with park directors, identifying limited development and uneven provision (e.g., orientation lines, tactile sensors, adapted mobile applications, audio descriptions and accessible sanitary facilities). Authors link poor web-based information to low visitation, note the absence of statistical monitoring, and highlight organisational constraints like limited capacity to adapt tours and insufficient staff training, collectively characterising national-park accessibility as emergent rather than established.

Hungary presents a longer and more diversified trajectory, although accessible tourism research intensified only towards the end of the first two decades of the 21st century. Early contributions in *Turizmus Bulletin* remain influential: Végh (2005) argues that the travel needs of Pwd are fundamentally similar to those of their non-disabled peers while documenting persistent disadvantages and sectoral challenges (transport, accommodation, spas and the role of animators). Gálné Kucsák (2008) draws attention to the relative invisibility of visually impaired travellers in accessibility thinking and identifies lack of information as a central constraint, while Csesznák et al. (2009) discuss museum accessibility through the lens of inter-institutional cooperation and equal opportunities. From 2010 onwards, the literature expands across formats and disciplines: broader quality-of-life framing (Michalkó, 2010), conceptual and empirical work on technical accessibility (Farkas, 2019), theses addressing disability, special needs and information accessibility (Dorogi, 2012; Mező, 2019), and applied studies in Hungarian journals on hotel-industry conflict management and equal opportunities (Kovács & Kozák, 2016; Gondos, 2019), as well as EU-level perspectives on accessibility and parasport tourism (Zsarnóczky, 2018). A legal-institutional strand is also present (Farkas & Nagy, 2020).

A notable development in Hungary is the increased international visibility of authors publishing in foreign journals, including Zsarnóczky (2018), Gonda (2021), and Zsarnóczky & Zsarnóczky-Dulházi (2019), as well as empirical work on managerial attitudes in hospitality (Sharma, Zsarnóczky & Dunay, 2018). The Erasmus+ Peer-AcT project functioned as a major catalyst, generating cross-country good-practice mapping and a questionnaire survey among Pwd (Gonda & Raffay, 2020, 2021), with additional dissemination via research summaries and workshop outputs (Gonda & Raffay, 2021). Institutionally, a conference held in Orfű in 2020 consolidated a national research community and led to a thematic issue in *Turisztikai és Vidékfejlesztési Tanulmányok (TVT)* in 2021, where studies addressed both general patterns (e.g., travel frequency: Gonda & Raffay, 2021) and specific sub-sectors, such as cultural facilities (Angler, 2021; Máté, 2021), wine tourism (Slezák-Bartos, Máté & Guld, 2021), river cruising (Pókó, 2021), and accommodation (Horváth, 2021). Subsequent work includes place-based analysis linked to Veszprém as European Capital of Culture (Raffay-Danyi & Ernszt, 2021) and a philosophical reframing of equal access (Farkas, Raffay & Dávid, 2022). Among Hungarian tourism journals, TVT has become the primary sustained outlet for accessibility scholarship, while international collaborations have supported publication in higher-ranked journals (Ernszt, Tóth-Kaszás,

Péter & Keller 2019; Csapó & Gonda 2019, 2025; Gonda 2024; Farkas, Raffay & Dávid, 2022).

Poland's literature, largely from the last decade, is distinctive for its breadth: it spans theoretical and conceptual discussions, empirical studies at scale, and a substantial body of practical guides and publicly funded good-practice compilations. Conceptually, Zajadacz (2015) offers a critical analysis of disability models as a basis for policy change, emphasising the value of synthesising paradigms often treated as opposed (notably medical and social models) in order to support accessible tourism development. Review-oriented work such as Lubarska (2018) focuses on how researchers classify barriers and constraints, comparing Polish and international typologies and identifying the most frequently applied categories. Empirical studies range from urban tourism (Popiel, 2014, on Kraków) to rural contexts with a large quantitative sample (Żbikowski, Siedlecka, & Kuźmicki, 2019), where education and professional activity emerge as key stimulants of tourism participation alongside family circumstances. Further contributions broaden the determinants of participation by linking tourism to leisure-time structure and preferences (Magiera, 2020) and examining how personal qualities shape tourist activity (Trybuś, 2023). The Polish literature also contains a specialised stream on sensory disabilities, including museum communication technologies such as beacons (Manczak & Bajak, 2020), and a sustained research programme on deaf tourism and accessible information provision (Zajadacz, 2012; 2014; Zajadacz & Szmal, 2017), as well as work on inclusive outdoor well-being environments for blind and partially sighted users through sensory gardens (Zajadacz & Lubarska, 2020; 2019).

A further Polish emphasis concerns ageing and senior tourism studies addressing demographic change and its market implications (Bąk, 2012), socio-demographic determinants (Grzelak-Kostulska & Hołowiecka, 2012), local participation and motivations (Kunysz, Rzepko, Drozd, Drozd & Bajorek, 2017), economic status and changing activity patterns (Markiewicz-Patkowska, Pytel, Widawski & Piotr Oleśniewicz, 2018), and accommodation-sector opportunities and challenges in an ageing society (Żmuda-Pałka & Siwek, 2019). Borzyszkowski & Michalczak (2021) add a policy-oriented review of initiatives to increase senior travel, translating European experiences into recommendations for Polish tourism policy. Importantly, Polish scholarship often treats accessible tourism in a broad, "tourism for all" frame that includes Pwd, older travellers and families with children (e.g., Zajadacz, 2017; Zajadacz & Lubarska, 2019a; Szał, Zajadacz, Lubarska & Minkwitz, 2021). Within this frame, criteria-based auditing of cultural heritage accessibility features prominently: Zajadacz & Lubarska (2019b) and Szał, Zajadacz, Lubarska & Minkwitz (2021)

propose catalogues of criteria structured around three core components – physical/technical preparation, information systems, and staff competences – illustrated through the Piast Trail case and used in practice for accessibility audits. The review also observes a terminological shift in Poland, with “availability” becoming a common descriptor and the English-derived “accessible tourism” replacing earlier expressions such as “tourism without barriers” and “tourism for disabled people”.

Romania’s reviewed literature places strong emphasis on structural barriers, the nascent state of provision, and the role of social tourism and responsible tourism frameworks in driving inclusion. Paşcalău-Vrabete and Băban (2018) analyse mobility-impaired individuals’ lived experiences in post-socialist Romania through phenomenological interviews, identifying themes that connect identity formation to social exclusion, physical barriers and the need to challenge medical-productivist perspectives. Oreian and Rebeleanu (2016) examine the social economy as a facilitator of socio-professional integration, including gendered aspects of employability for people with mental disabilities, implying that labour-market integration and social policy are closely intertwined with the conditions that enable travel participation. Social tourism is presented as a “market of the future” for disadvantaged groups (Mihaela, 2019), yet Simon, Busuioc, Niculescu & Rădulescu (2017) and Simon, Bogan, Frent & Barbu (2018) argue that social tourism, including tourism for Pwd, remains underdeveloped and poorly monitored, with limited participation data and inadequate national-level information.

Romanian research also documents emerging initiatives and persistent infrastructural and informational deficits. Mihaela (2019) describes Motivation Foundation Romania’s online accessibility map established from 2013, alongside building accessibility assessment leading to an “accessibility mark”, and notes a limited number of tourism providers meeting criteria. Babaita (2014) investigates societal openness to this market segment and explores attitudes of non-disabled people towards Pwd, arguing for the development of a social model in tourism scholarship. Within responsible tourism, Văduva, Petroman, Marin & Petroman (2021) synthesise barriers (environmental, infrastructural and social) and propose implementation measures aligned with international guidance, including public–private partnerships, international cooperation, training, diversified transport systems and accessible destination promotion. Sector-specific studies highlight accommodation choice challenges (Butnaru, 2010), the application of indicator systems such as ETIS (Tudorache, Simon, Frenţ & Musteaţă-Pavel, 2017), and family tourism involving children with disabilities (Tecu et al., 2019), where inadequate preparation among authorities, tourists and employees, as well as cultural and economic constraints, limit participation. Qualitative and applied studies

repeatedly identify limited accessible infrastructure in hotels and resorts (Munteanu, Rizea, Ilie & Sârbu, 2014; Babaita, 2012), low levels of overall development (Rabontu, 2018), the need for software platforms to support safe route planning and information communication (Tecău, 2017), and widespread accessibility deficits across hotels, transport and tourist sites despite legal obligations under Romanian Law 448/2006 (Cernaianu-Sobry, 2011). Empirical evidence from Braşov County and other settings points to recurrent difficulties around transport, attraction accessibility and information for both disabled travellers and companions (Epuran, Tecau, Constantin, Tescasiu & Chitu, 2020; Brătucu, Chitu, Dinca & Stefan, 2016; Brătucu, Chiţu, & Demeter, 2015). Finally, Crismariu (2017) characterises Romania as being in an awareness-raising and early-stage phase, where training, principle-setting and groundwork are prerequisites for subsequent development; Bordeianu (2015) too notes limited understanding and weak enforcement of disability-related legislation, coupled with superficial sectoral knowledge about how to implement accessibility.

Taken together, the four-country review indicates uneven research maturity and differing emphases: Croatia's recent scholarship provides targeted insights into governance, mobility and protected-area interpretation but remains limited in volume; Hungary exhibits rapid consolidation, institutionalisation and internationalisation, particularly following the Peer-AcT project; Poland offers a broad and methodologically diverse body of work linking disability, ageing and family travel, with strong applied outputs (criteria catalogues, audits and guides); and Romania's literature foregrounds systemic constraints, social tourism's underdevelopment, and the early-stage nature of accessibility implementation, while also documenting nascent digital and certification initiatives. Across contexts, the most consistent cross-cutting message is that accessible tourism is best understood as an integrated policy-and-practice domain requiring infrastructural adaptation, reliable information ecosystems, skilled and sensitised staff, and governance mechanisms that embed accessibility as a standard feature of destination development rather than a peripheral add-on.

This paper aims to remedy the first research gap: having access to populations that lie out of the most common social groups where informants are usually selected from, it relies on a questionnaire survey conducted in four Central-Eastern European countries, reaching a total of 1,175 people living with disabilities. The main aim of the research was to identify the issues of general accessibility and accessible tourism in Hungary and three other Central-Eastern European countries (Croatia, Poland and Romania), the factors that hold back or discourage Pwd from travelling in the respective countries and, equally important, to find

solutions to remedy these issues and make recommendations for a more inclusive tourism sector.

## DATA AND METHODS

The research was conducted in the framework of an international research project called Accessible+, led by the University of Pécs in Hungary, in 2023–2025 (Csapó et al., 2025). The project partnership included, in addition to the University of Pécs as a lead partner, Adam Mickiewicz University in Poznań, Poland; University of Zagreb in Croatia; and Sapientia Hungarian University of Transylvania, Romania. Besides a detailed review of literature on accessible tourism in the four countries, two extended questionnaire surveys were conducted in each country:

1. the “able-bodied” society was conducted in all four countries, with a sample of over 4,000 respondents from the four countries combined (representative of the respective societies), in an attempt to gain a deeper understanding of the attitudes of the general public towards the state of development of accessible tourism in their countries, their attitudes towards the needs and requirements of this specific demand segment, and their knowledge about possible barriers for Pwd; and
2. a research carried out among people with various disabilities, conducted in parallel in the four countries in the period October 2023–January 2024 with a sample of 1,175 people. The main objective of this survey was to identify patterns of tourist behaviour of Pwd, their limitations in tourist travels, as well as important directions of education of staff working in tourist services in the field of accessible tourism (Csapó et al. 2025). The empirical findings of the paper are from this latter questionnaire survey.

Given the difficulties of reaching this specific segment, a sample of almost 1,200 respondents can be considered as a good basis to draw conclusions from, conclusions that are generalisable not only to other Central-Eastern European countries but also to countries with different socio-economic development paths, as previous research findings show that the issues of inclusive tourism, the travel difficulties for Pwd are quite similar in other countries of Europe (Gonda 2021).

The basis for conducting the research was a survey form created jointly by the research teams representing the four countries involved in the project – initially in English, then

translated into national languages to alleviate the research. The research was conducted face to face and based on an electronic form. The selection of the sample was based on availability. Having collected the responses, results were recorded in English and in simple statistical summaries (number, percentage of indicated responses), enabling further, in-depth statistical analyses. Before discussing the research results, the characteristics of the respondents were presented, including features like gender; age; marital status; the level of highest finished school education; employment conditions; settlement type of place of residence of the respondent; country of residence; and type of disability. Respondents' characteristics also included the following variables by type of disability: limitations in everyday functioning; limitation of individual mobility; disability from birth; ability of leaving home to deal with everyday matters.

As regards the general characteristics of respondents, a slight majority were women (54%) compared to men (43%) – some did not want to answer this question or indicated the “other” category. Respondents most often described their limitations in everyday functioning as “slightly limited in my daily activities” and “intermittently need assistance with daily activities”. Most of the respondents “can travel on all means of transport without any assistance” (36%) and “need assistance to get around on some public transport” (31%). Nearly half (49%) of men and 47% of women indicated their disability from birth. The study involved adults aged 18 to over 66. The largest groups were those aged 36-50 (29%), 51-65 (19%) and 26-35 (19%). It can be noticed that the highest percentage of respondents stating that they “need constant supervision” are people in the youngest age group 18-25 years (14%). The largest part of this, the youngest group also indicated “cannot get around without an assistant person” (24%).

In terms of marital status, most indications included the categories of “single” (44%) and “married” (29%). The most common limitations: “I can't get around without an assistant person” were mentioned in the group of singles (23%) and divorced people (22%). As regards the highest finished school education, the most common answers were “Secondary school” (32%) and “Vocational school” (20%). The percentage of people with a university or bachelor's degree decreases with the increase in limitations in everyday functioning from 59% in the “am slightly limited in my daily activities” group to 2% in the “need constant supervision” group, but there is no such relationship with regard to the limitation of individual mobility.

The most frequent answer to questions about employment conditions were Pensioner (20%), White-collar employee (18%) and Disability pensioner (18%). However, in the case of

the white-collar employee group, there is a noticeable tendency for the percentage of employees to decrease as the limitations in everyday functioning increase. Also, the smallest percentage of people from the group that indicated their mobility limitations at the highest level (“I can’t get around without an assistant person”) are employed as white-collar employees.

Concerning the type of settlement where respondents live, the largest group lives in a village (22%), followed by medium-sized city of 25,000 – 100,000 people (21%), capital city (14%) and large regional centre of 500,000 – 1 million inhabitants (11%). The largest number of respondents live in Romania (29%), followed by Hungary (27%), Poland (25%) and Croatia (17%).

The primary aim of the research was to identify travel habits of the target group and detect the factors that deter them from travelling.

## RESULTS

### **Travel arrangements for Pwd and the main purpose of their trip**

A very important aspect in research related to accessible tourism is the very ability to travel for recreational purposes by Pwd and the need to travel in the company of assistants. In the analysed sample of 1,175 respondents, 1,166 indicated their travel frequency, of which 15% do not travel for recreational purposes, 49% travel with assistance, and 36% travel alone. Most of the negative answers by type of disability were given by participants with Multiple disability (22%), Obstacle related to age (18%) and Psychosocial disability (17%). Least “No” answers were given by the Speech (3%), Hearing (6%) and Sight (8%) impairment groups. Those who most often travel for recreational purposes with assistance are people with Intellectual disability (73%), Sight problems (59%), Locomotor impairment and ASD (58%). The least likely disabled individuals to travel for recreational purposes with assistance are those with Obstacle related to age (12%), Speech (21%), and Hearing (24%). Those who most often travel alone for recreational purposes include individuals with Speech (76%), Obstacle related to age (70%), and Hearing (70%). In contrast, individuals who travel least often for recreational purposes on their own are those with Intellectual disability (18%), Locomotive disability (28%), and Multiple disability (28%).

Equally important aspects of travelling are organisational issues, which may be more difficult in the case of tourism for Pwd. Not surprisingly, the majority of respondents travel with companion and not on their own: most of them (44%) travel with their family (including

spouse and children) or with friends and relatives (42%). They least frequently mentioned colleagues from workplace (10%) as travel companions, and travelling on their own (18%).

Respondents were also asked about who organises the tours typically – replies included people from their immediate environment: other family member (36%), independent organisation of trips with the help of booking platforms (32%), and NGOs (non-governmental organisations) assisting Pwd (31%). The aspect of support in organising travel is also important: to the question ‘To whom can you turn for help if you need assistance in organising and implementing your travel?’, respondents mentioned family (56%), and NGOs assisting Pwd (30%); but they also organise trips themselves (29). Most respondents finance their trips from their own budget (53%) and use help from their family (33%). They also use several sources of financing mentioned in the survey (22%). (In the questions above more than one answer could be indicated.)

The study also touched upon the issue of the form of travel, i.e. the type of group with which respondents prefer to go on a trip. They indicated what form of travel organisation and group structure suited them best: travels specifically designed for Pwd; travel with integrational programmes (designed for both disabled and non-disabled travellers); programmes that are not specifically designed for Pwd; and travel without any assistance. Respondents equally prefer travelling with integrational programmes and individual travelling, without any assistance (19% both), slightly less respondents indicated travelling with programmes that are not specifically designed for Pwd (16%) and travelling with programmes for Pwd (15%). However, respondents generally indicated trips organised without any assistance (36%).

Analysing the results in terms of individual types of disabilities, in programmes designed specifically for Pwd, respondents with intellectual disability (39%) and with multiple disabilities (21%) would be most willing to participate, the least willing, on the other hand, are respondents with temporary disability (42%) and with obstacles related to age (38%). Integrational programmes would be most willingly chosen by respondents with multiple disability (24%) and intellectual disability (27%), and the least willingly by those indicating other disabilities (27%), temporary disability (25%), locomotor disability (24%) and obstacles related to age (23%). Programmes that are not specifically designed for Pwd are preferred by respondents with ASD (22%), other disabilities (21%) and locomotor disabilities (20%). On the other hand, this form of travel corresponds least to people with intellectual disability (29%), with multiple disabilities (25%) and those indicating other disabilities (25%). Respondents with other disabilities (40%) and hearing problems (29%) would prefer to travel

without any assistance. This latter form of travel would not be chosen by respondents with intellectual disability (70%) and with multiple disabilities (47%).

An important issue in organising the trip and preparing an appropriate offer is also information about the main purpose of the trip. To obtain the answer, respondents were asked to rate how often they travel for each of the following 12 purposes – cultural; wellness; medical; (active) sport; business; religious; nature trip; shopping; city sightseeing; visiting friends and relatives; visiting a concert, sporting event, exhibition; and culinary, on a 4-point scale, where 1 means never, 2 is rarely, 3 is often, and 4 is very often. Generally speaking, the respondents mostly (score 4) indicated visiting relatives and friends (35.9%), nature trip (27,3%) and culture (24.9%) as the main purpose of their trips. The least common was the business-inspired tips – 71.2% indicated this was not their motivation to travel.

Another important aspect related to travelling for Pwd is determining the level of difficulty in performing specific activities or obtaining reliable information related to the availability of tourist attractions during travel (tourist supply). The activities performed by Pwd while travelling and the access to which basically determines their travel experience include:

- use of transportation;
- use of accommodation;
- use of catering facility;
- sport activities;
- visiting attractions; and
- lack of reliable information on real accessibility.

In the sample of respondents, only 21% of them encountered no difficulties related to the use of transportation, while 17% of respondents very often encountered difficulties during the use of it. With regard to the level of difficulties related to the use of accommodation encountered by Pwd, 26% of all respondents did not encounter difficulties at accommodations, while 13% of respondents very often encountered difficulties when using them. As regards the level of difficulties related to the use of catering facilities encountered by Pwd, 28% of all respondents encountered no difficulties, while 9% of them very often faced difficulties when using a catering facility. In the access to sport activities, 21% of all respondents did not encounter difficulties, while 18% of respondents very often faced difficulties when using sport activities. The questionnaire also asked about the level of difficulties related to visiting attractions as seen by Pwd, where 20% of all respondents did not report any difficulties, while 12% of them very often encountered difficulties when

visiting attractions. A serious issue is the lack of reliable information on real accessibility faced by Pwd: 20% of all respondents did not encounter difficulties in this matter, while 19% of them very often encountered difficulties related to information.

To check the validity of the common belief that Pwd travel less frequently than their able-bodied counterparts, we also asked the question ‘How many times did you travel in your country in 2022?’ (the year preceding the start of the questionnaire survey). In the analysed sample, only 9% did not travel in 2022, 10% travelled only once, 12% travelled twice, 11% travelled three times and as many as 58% of respondents declared that they had travelled more than three times during the specified period. Analysing this question in terms of types of disabilities, it should be stated that the types of disabilities that prevent people from travelling within their own country in 2022 were: Obstacle related to age (21%), ASD (14%) and Multiple disabilities (10%). On the other hand, people with Other (71%), Sight (68%) and Temporary disability (64%) travelled the most within their own country (Table 1).

**Table 1** Frequency of respondent’s travels within her/his homeland in 2022

Disability	Not once	Once	Twice	Three times	More than three times	Total
Temporary disability	3	5	5	6	34	53
	6%	9%	9%	11%	64%	
Obstacle related to age	17	10	12	6	37	82
	21%	12%	15%	7%	45%	
Sight	8	8	14	7	80	117
	7%	7%	12%	6%	68%	
Hearing	1	5	8	6	31	51
	2%	10%	16%	12%	61%	
Locomotory	32	34	46	43	198	353
	9%	10%	13%	12%	56%	
Multiple disability	29	30	29	30	179	297
	10%	10%	10%	10%	60%	
Intellectual disability	4	11	9	5	30	59
	7%	19%	15%	8%	51%	
Speech	1	2	3	7	16	29
	3%	7%	10%	24%	55%	
Other	1	2	3	3	22	31
	3%	6%	10%	10%	71%	
ASD	8	11	5	8	27	59
	14%	19%	8%	14%	46%	
Psychosocial disability	0	2	1	2	7	12
	0%	17%	8%	17%	58%	
All Groups	104	120	135	123	661	1143

Source: Csapó et al. 2025, p. 185.

The frequency of travels abroad was also analysed, using the question ‘How many times did you travel abroad in 2022?’. Of all respondents answering this question (1,143 persons), 58% did not travel abroad in 2022, 14% travelled only once, 13% travelled twice, 6% travelled three times, and 9% of respondents declared that they had travelled more than three times abroad in 2022. As regards the of types of disabilities of respondents, people with the following types of disabilities typically did not travel abroad in 2022: Psychosocial disabilities (83%), Intellectual disabilities (77%) and Multiple disabilities (63%). On the other hand, people with temporary disability (30%), Speech (21%) and Hearing (12%) travelled abroad the most (Table 2).

**Table 2** Frequency of respondent’s travels abroad in 2022

Disability	Not once	Once	Twice	Three times	More than three times	Total
Temporary disability	20	4	12	1	16	53
	38%	8%	23%	2%	30%	
Obstacle related to age	46	13	16	0	7	82
	56%	16%	20%	0%	9%	
Sight	66	18	10	12	11	117
	56%	15%	9%	10%	9%	
Hearing	26	10	7	2	6	51
	51%	20%	14%	4%	12%	
Locomotory	201	57	46	19	28	351
	57%	16%	13%	5%	8%	
Multiple disability	188	29	37	26	18	298
	63%	10%	12%	9%	6%	
Intellectual disability	46	7	1	2	4	60
	77%	12%	2%	3%	7%	
Speech	10	4	7	2	6	29
	34%	14%	24%	7%	21%	
Other	15	9	4	2	1	31
	48%	29%	13%	6%	3%	
ASD	35	14	6	3	1	59
	59%	24%	10%	5%	2%	
Psychosocial disability	10	1	1	0	0	12
	83%	8%	8%	0%	0%	
All groups	663	166	147	69	98	1143

Source: Csapó et al. 2025, p. 186.

To analyse travel frequencies in a broader time horizon we asked two more questions, concerning the numbers of travels by respondents in 2018-2021. In the sample of 1,139 who answered this question, 6% did not travel within their country in 2018-2021, 5% travelled only once, 6% travelled twice, 7% travelled three times and 76% of respondents declared that

they had travelled more than three times within their country in the given period of time. Broken down by types of disabilities, the largest group of Pwd not to travel within their own country in 2018–2021 were those with Psychosocial disabilities, ASD, and Obstacle related to age. As for foreign trips, of the 1,143 respondents answering, 37% did not travel abroad in 2018-2021, 14% travelled only once, 15% travelled twice, 10% travelled three times, and 24% of respondents declared that they travelled abroad more than three times between 2018 and 2021. Analysing the answers in terms of types of disabilities, it can be seen that the biggest obstacles to disabled individuals deterring them from travelling abroad were Intellectual disability, Obstacles related to age, Multiple disability and Psychosocial disability. On the other hand, individuals with Temporary disability, Hearing, Locomotive and Other impairments travelled abroad the most in 2018-2021.

### **The impact of accessibility improvements on accessible tourism**

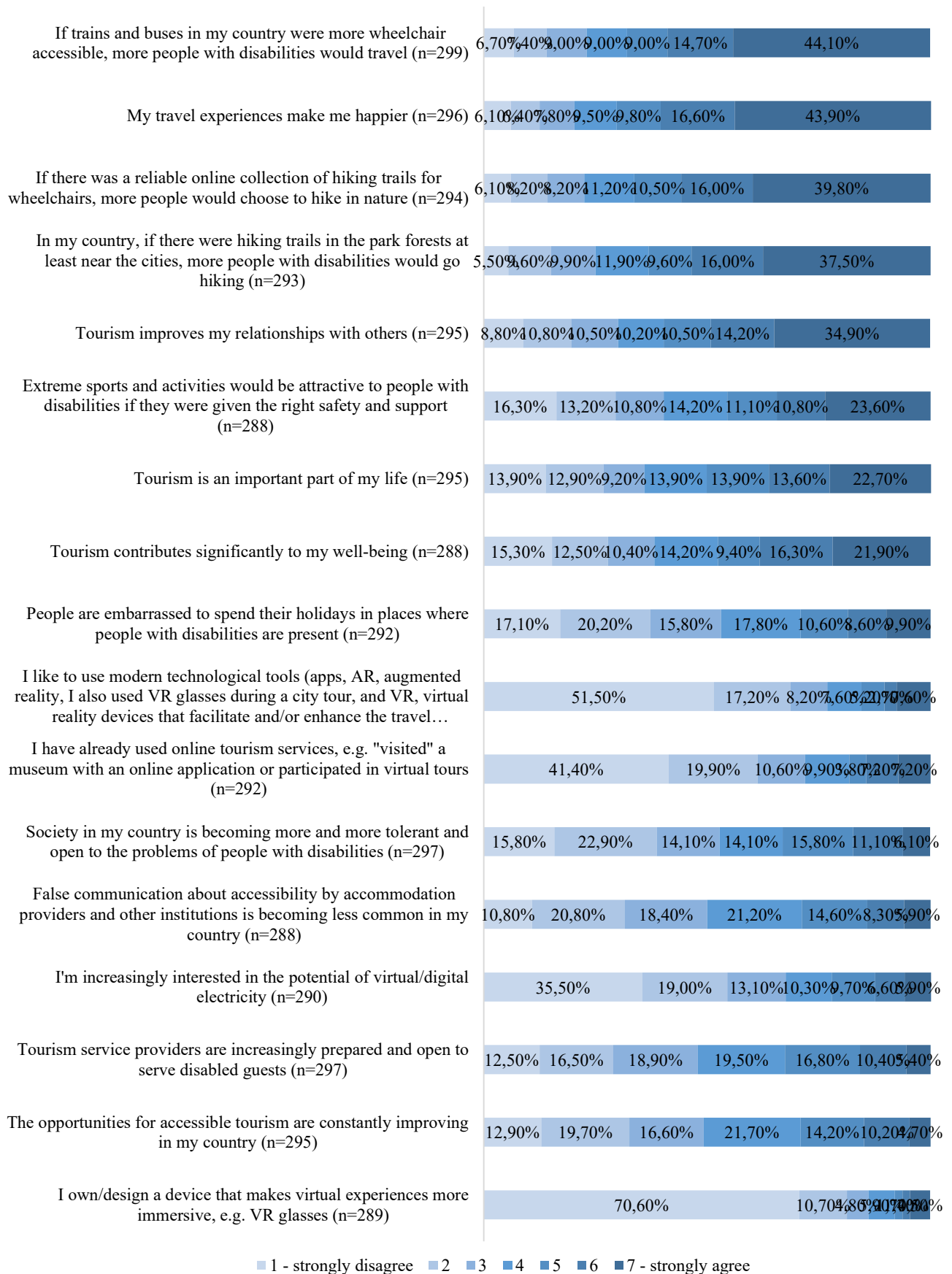
Besides these quantifiable issues, the questionnaire survey was also used to detect opinions of respondents about issues concerning the situation and possible improvement of accessible tourism in their countries, in order to find out which are the major areas that still need to be improved for a more inclusive tourism sector. Respondents were asked to indicate their level of agreement or disagreement with specific statements. They could mark their answers on a rating scale from 1 to 7, where 1 meant “I do not agree at all” and 7 meant “I completely agree”. The attitude statements were as follows:

- If trains and buses in my country were more wheelchair accessible, more Pwd would travel.
- Travel experiences make me happier.
- If there was a reliable online collection of hiking trails for wheelchairs, more people would choose to hike in nature.
- In my country, if there were hiking trails in the park forests at least near the cities, more Pwd would go hiking.
- Tourism improves my relationships with others.
- Extreme sports and activities would be attractive to Pwd if they were given the right safety and support.
- Tourism is an important part of my life.
- Tourism contributes significantly to my well-being.
- People are embarrassed to spend their holidays in places where Pwd are present.

- I like to use modern technology tools (apps, BVR, augmented reality), I also use VR glasses during a city tour, and VR, virtual reality devices that facilitate travelling.
- I have already used online tourism services, e.g. “visited” a museum with an online application or participated in virtual tours.
- Society in my country is becoming more and more tolerant and open to the problems of Pwd.
- False communication about accessibility by accommodation providers and other institutions is becoming less common in my country.
- I’m increasingly interested in the potential of virtual/digital tourism.
- Tourism service providers are increasingly prepared and open to serve disabled guests.
- The opportunities for accessible tourism are constantly improving in my country.
- I own a device that makes virtual experiences more immersive.

The distribution of replies to the various statements can be seen in Fig. 1. Although the chart is not very easy to read, it is clearly visible that the right (darker) side of the columns means a basic agreement and the left (light) one a basic disagreement with the given statements. In addition to the definite agreement with the beatific nature of tourism (almost two-thirds of respondents said tourism definitely made them happier, and half of them felt the relationship-improving effect of travels), there is a general consensus that the improvement of accessible infrastructure (accessibility of public transport devices, wheelchair accessible hiking paths at least in the vicinity of major settlements) and the reliability of information on accessible attractions and facilities would greatly improve the willingness of Pwd to travel. (If these improvements were made, probably the agreement with the statement on the importance of tourism in one’s life and general well-being would also be stronger, although it is mostly positive now as well.) What seems to be surprisingly low is the acceptance of modern technology devices that seemingly make tourism more democratic, allowing people unable or hardly able to travel to get the same experiences as their able-bodied counterparts – it seems that Pwd want to participate in the same real-life experiences as everybody else, and this finding is in line with previous research on the travels habits of Pwd (Gonda & Raffay 2021).

**Figure 1** Levels of agreement by respondents with accessible tourism related issues



Source: Csapó et al., 2025

As regards the attitude of the majority society towards Pwd, the situation is neither definitely bad nor completely satisfying (but less than optimum of the whole): the majority of respondents reported that in their opinions and experiences non-disabled people felt uneasy when being together with apparently disabled people, and more than a third mentioned intolerance and lack of openness of the majority society towards the problems faced by Pwd; also, exactly half of the respondents said that false communication on accessibility is still rather typical, and almost half of them had a negative opinion about the general improvement of the opportunities for accessible tourism in their countries. The replies, on the other hand, were also positive in a significant proportion of the cases, with several respondents reporting on palpable improvement in the issues (see Fig. 1).

A similar question related to the attitude of majority society towards Pwd was whether respondents had experienced discrimination when travelling and if so, what form of it. The answers to this open question were grouped into 10 categories and frequency analysis was carried out. The sensitive nature of the question and the sensitivity of the topic is reflected in the unexpected result that not all respondents answered this question – only a third of them (340 respondents, i.e. 29%). In fact, the same number of people (340) said they had not experienced discrimination. However, the largest group were those who encountered discrimination while travelling – 42% of respondents. Each person who reported discrimination could describe what it was. A wealth of data was created from 489 people, which can be analysed in many aspects. One of them is an attempt to assess whether the discrimination had a technical or human basis, i.e., to what extent it resulted from the lack of appropriate infrastructure, and how much from unprofessional approach to the disabled client (on a trip, in a hotel, a restaurant) or inappropriate behaviour towards Pwd on the part of other people travelling or using tourist services (staying in the same hotel, train, beach etc.).

The predominant form of discrimination was unfriendly, often very offensive and degrading treatment by other people – indicated by no less than 58% of the responses, which shows the scale of the problem, especially if compared to architectural and infrastructural barriers, which were mentioned by 15% of people who said they experienced discrimination. Every tenth respondent indicated refusal of service to them. These results show that discrimination against Pwd when travelling has a very strong social basis. It is not the architectural barriers that are the main obstacle; it is the lack of empathy among the people the disabled persons travel with.

Respondents were also asked about their best practice experiences with two open questions: (1) based on your experience, which country or countries should your country

follow in the field of accessible tourism? and (2) in which countries and/or in your country, in which tourist destinations/attractions have you seen good examples of supporting the participation of Pwd in tourism? A surprisingly high proportion of respondents found it hard to give examples (45% and 40% to the two questions, respectively) and did not mention any. Of the countries mentioned as good examples, the top three were the Netherlands with 14%, Germany with 7% and Austria with 5% of mentions. In turn, respondents noted good examples of supporting the participation of Pwd in tourism in Austria (20%), and Poland and Hungary (4% each).

## **CONCLUSIONS AND RECOMMENDATIONS**

Despite being a large and increasing segment, Pwd are a relatively under-researched segment of tourism, with most of the literature on the topic released in the recent two decades. From the early 2000s on, the research on accessible tourism gained momentum, and now the issue of the travels of disabled people is scrutinised from several aspects (legal and organisational issues, technical and technological issues, experiences and motivations of Pwd, their technological accessibility needs, market strategy studies, travel industry attitudes etc.). Most of the studies, however, are qualitative in nature, given the relatively difficult accessibility of the target group.

In the framework of an international cooperation, a quantitative recent survey made with more 1,100 respondents, all Pwd, in four Central-Eastern European countries (Croatia, Hungary, Poland and Romania) was carried out in 2023-2024 to reveal the travel habits of Pwd and identify the main obstacles that prevent them from travelling.

The overwhelming majority, 85% of the respondents to the questionnaire are active travellers, both within their countries and abroad, although the frequency of domestic travels is much higher than that of the trips made abroad. Those segments that seems to be most excluded from the joy of travel are those with multiple disability, old-age and having psychosocial disability, whereas almost all of those who have speech impairment travel. The majority of respondents travel with companion: most of them with their family or with friends and relatives, the least typical is their travelling on their own. This is a clear indication of the economic significance of this segment in tourism: allowing one person with disabilities to travel typically means another person(s) involved in tourism.

Pwd are much less keen on specific programmes designed for them than it is often thought: their feeling of independence and dignity is reinforced by their ability to participate in any

travel designed for all (underlining the importance of the application of the principles of universal design). Respondents also like travelling with integrational programmes, and their least favoured means of travels is participation in programmes specifically designed for Pwd. There are differences of course, when the form of disability is taken into consideration. In programmes designed specifically for Pwd, respondents with intellectual disability and with multiple disabilities would be most willing to participate (39% and 21%, respectively), the least willing, on the other hand, are those with temporary disability (42%) and with obstacles related to age (38%). Integrational programmes (designed for both disabled and non-disabled travellers) would be most willingly chosen by respondents with multiple disability and intellectual disability. As regards the main travels motivations, they are similar to those of the able-bodied society, visiting relatives and friends, nature trip and participation in culture-related programmes being the main purposes of their trips.

A central part of the survey was to detect the factors that keep Pwd from travelling. In line with previous findings of similar survey (e.g. PeerAcT, see Gonda & Raffay 2021), it is transportation, especially public transportation that poses the biggest challenge, but the access to tourism attractions is far from being satisfactory, as well. The situation seems to be the best in case of catering facilities. A serious issue is the lack of reliable information on real accessibility faced by Pwd: it is only one-fifth of all respondents who did not encounter difficulties in this matter, while the same proportion of them very often encountered difficulties related to information.

In addition to looking at their travel habits, an equally important part of the research was to find out what needs to be done to make the tourism industry more inclusive, by breaking down the barriers to the travels of Pwd. For this, respondents were asked to express their opinions concerning seventeen statements regarding the actual conditions and the development possibilities of accessible tourism in their countries, ranging from their personal feelings about travels through infrastructure developments allowing their travels to the attitude of the majority society towards them.

There seems to be a definite agreement on the beatific nature of tourism, the fact that tourism makes people happy and is an integral party of their lives. Respondents also agreed that improvement of accessible infrastructure (accessibility of public transport devices, wheelchair accessible hiking paths at least in the vicinity of major settlements) and the reliability of information on accessible attractions and facilities would significantly improve the willingness of Pwd to travel. The acceptance of modern technology devices, seemingly more important for Pwd than for their able-bodied peers, is very low, another reinforcement

of the fact that Pwd want to participate in the same real-life experiences as everybody else, and this finding is in line with previous research on the travel habits of Pwd. What is a definite problem, though, is the attitude of the majority society (and also the tourism industry) towards people in need of assistance: although the situation is not definitely bad, the majority of respondents reported that in their opinions and experiences the non-disabled had prejudices about and bad attitudes towards apparently disabled people, with more than a third of them reporting on the intolerance and lack of openness of the majority society towards the problems faced by Pwd; also, half of all encountered false communication on accessibility, and almost half of them had a negative opinion about the general improvement of the opportunities for accessible tourism in their countries. The replies, on the other hand, were also positive in several cases, with several respondents reporting on palpable improvement in the issues.

A similar question related to the attitude of majority society towards Pwd was the very existence and the form of discrimination experienced by the disabled respondents during their travels. Most respondents, unfortunately, did experience discrimination, in the most diverse forms. The predominant form of discrimination was unfriendly, offensive and degrading treatment by other people – indicated by more than half of the respondents, which shows the scale of the problem, especially if compared to architectural and infrastructural barriers, which were mentioned only by 15% of people who said they experienced discrimination. Every tenth respondent indicated refusal of service to them. These results show that discrimination against Pwd when travelling has a very strong social basis. It might be an exaggeration to talk about an ableist attitude of societies, but much remains to be done in the field of sensitisation of both industry service providers and the fellow travellers. It is not the architectural barriers that are the main obstacle; it is the lack of empathy among the people the disabled persons travel with.

The findings of the study may also be thought-provoking and inspiring for the practical side, i.e. tourism service providers and decision-makers. Several service providers (accommodation and catering facility owners, attraction managers, etc.) are often either unaware of the necessities of disabled travellers or, even if they, are reluctant to make alterations and investments, in the false belief that serving the market of Pwd is not a good investment where money may never return and also that accessibility improvements are often technically difficult or impossible to implement. There are many improvements, however, that are more of a matter of attitude than of capital; also, most capital investments in accessibility return within a reasonable timescale, due to the significant market demand by people with

disabilities – another factor that practical experts may not necessarily know. Last but not least, higher education institutions may find the study findings useful, helping them integrate the issue of accessible tourism into their training curricula, founding this way the supply of future experts who are not only sensitive towards the needs of disabled travellers but are also knowledgeable in the issue.

There are limitations of this survey, of course. The findings are from a specific region, Central-Eastern Europe, with a peculiar historical development path, and the findings valid in this macro-region may not necessarily correspond to findings in e.g. Western Europe, although the combined population of the four countries amounted to 100.713 million in 2022, the year preceding the start of the project, representing 69.8% of the total population of the macro-region and 21.6% of the population of the European Union as a whole ([ec.europa.eu/eurostat](http://ec.europa.eu/eurostat)), and the findings are similar to those made in a previous survey (PeerAcT, see Gonda & Raffay 2021) where Western European countries were also present. Also, the survey is one-off examination, a longitudinal survey detecting the changes in the situation of Pwd and the attitudes of tourism service providers and the majority societies towards them would be very important. Furthermore, more research is needed on the existing good practices and the impacts of the already existing initiatives designed to improve the situation of Pwd (e.g. the application of universal design at tourism attractions and service facilities, campaigns for the sensitisation of the employees and staff, as well as the majority societies).

## **SUMMARY**

Despite all efforts made in the recent decades, people living with disabilities are still a market segments whose needs are not fully satisfied in tourism, due to different problems (lack of information or misunderstandings of their needs by decision-makers and service providers in tourism, architectural and design problems at some attractions and venues, inadequate attitudes of the staff at some tourism facilities etc.). The total of the tourism supply chain must be made accessible for a large proportion of people who live with disabilities. There is much to be done in this respect, as most of the Pwd still find difficulty in travelling, access to the tourism attractions, and suffer from the discrimination of the fellow travellers, tourism service providers and the majority society as a whole. On the technical side of improvements, it is especially transportation, within that public transportation that must be made more inclusive, and a better access to attractions must be achieved (using the principles of universal design –

what is good for Pwd is good for everyone), whereas on the “soft solutions” side it is the attitude of service providers and the non-disabled society that must be altered. The findings from a survey questioning 1,175 disabled persons from four Central-Eastern European countries are a contribution to this effort.

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## **EURÓPAI UNIÓS PROJEKTEK INNOVATÍV HATÁSA KÁRPÁTALJA TURISZTIKAI KÍNÁLATÁRA**

### **THE EUROPEAN UNION PROJECTS INNOVATIVE IMPACTS ON THE TOURISM OFFER OF TRANSCARPATHIA**

**Ildikó KAMPÓ<sup>a</sup>**

<sup>a</sup>University of Pécs, 7624 Pécs, Ifjúság útja 6., ikamp9@gmail.com

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#### **Abstract**

Tourism is not only an economic factor, but also has social and environmental impacts. In the case of Transcarpathia, it is especially important that tourists not only appear as transients, but also leave the region enriched with real experiences.

The EU offers several development programs targeting different regions and sectors, so the development of tourism in Transcarpathia can also benefit from EU funding.

A key role in increasing the region's tourist attractiveness is the renewal of marketing and sales strategies. One of the most important aspects of EU projects is innovation, especially the integration of digital technologies into tourism. In addition to the use of digital technology, EU projects are also moving Transcarpathia towards sustainable tourism.

The innovative impact of EU projects on tourism in Zakarpattia is extremely positive. Sustainable tourism, infrastructure development, the use of digital technologies and the involvement of local communities all contribute to making the area increasingly attractive to tourists.

Keywords: Transcarpathian tourism, EU development programmes, innovation, sustainability, regional development

#### **BEVEZETÉS**

Kárpátalja, a Kárpátok festői tájain elhelyezkedő régió, mely gazdag kulturális örökséggel, lenyűgöző természeti szépségekkel és sokszínű néprajzi hagyományokkal büszkélkedhet. A térség turizmusának fejlesztése kiemelt fontosságú, hiszen a helyi gazdaság megerősítése és a közösségek fenntartható fejlődése szoros összefüggésben áll a látogatók számának növekedésével. Az Európai Unió által támogatott projektek ebben a folyamatban jelentős szerepet játszanak, hiszen céljaik között szerepel a régió vonzerejének növelése, a helyi infrastruktúra fejlesztése és a fenntartható turizmus elősegítése.

A turizmus nem csupán gazdasági tényező, hanem társadalmi és környezeti hatásokkal is bír. Kárpátalja esetében különösen fontos, hogy a turisták ne csak átutazóként jelenjenek meg, hanem valódi élményekkel gazdagodva távozzanak a térségből. Az EU-s projektek révén

megvalósuló innovációk képesek új, vonzó programokat, szolgáltatásokat és élményeket teremteni, amelyek segítik a helyi közösségek fejlődését, miközben megőrzik a kulturális örökséget és a természeti értékeket.

A régió turisztikai vonzerejének növelésében kulcsszerepet játszik a marketing és az értékesítési stratégiák megújítása. Az EU által finanszírozott projektek lehetőséget adnak arra, hogy a helyi vállalkozások és turisztikai szolgáltatók együttműködjenek, tapasztalatokat cseréljenek, valamint új módszereket és eszközöket sajátítsanak el. Az innovációs lehetőségek kiaknázása érdekében fontos, hogy a helyi közösségek, a turisztikai szakemberek és az önkormányzatok szorosabb kapcsolatban dolgozzanak együtt, hiszen ez a siker kulcsa. (Kengyel, 2008)

A digitális technológia térnyerése szintén jelentős hatással van a turizmusra. Az EU-s projektek keretében a digitális platformok és alkalmazások fejlesztése lehetővé teszi, hogy a turisták könnyebben tájékozódjanak a helyi látnivalókról, programokról és szolgáltatásokról. Ezen eszközök révén a látogatók jobban megismerhetik a térség kulturális és természeti értékeit, valamint élményeiket megoszthatják másokkal, így fokozva Kárpátalja hírnevét és vonzerejét. (Fejes, 2023)

Egy másik fontos szempont a fenntarthatóság. A helyi közösségek számára elengedhetetlen, hogy a turizmus fejlődése ne járjon a környezeti erőforrások kimerülésével vagy a kulturális értékek leépülésével. (Lengyel, 2010) Az EU-s projektek keretében megvalósuló környezetbarát kezdeményezések és fenntartható turizmusra vonatkozó irányelvek hozzájárulnak ahhoz, hogy a turizmus a jövőben is pozitív hatással legyen a térségre. A helyi termékek és szolgáltatások népszerűsítése, a természetvédelmi területek fenntartása és a közlekedési lehetőségek fejlesztése mind olyan lépések, amelyek elősegítik Kárpátalja hosszú távú fenntarthatóságát.

Kárpátalja turizmusának jövője szorosan összefonódik az EU-s projektek által nyújtott innovatív megoldásokkal. A helyi közösségek, a turisztikai szolgáltatók és az önkormányzatok együttműködésével a térség képes lehet arra, hogy nemcsak a látogatók számára vonzó úti céllá váljon, hanem a helyi lakosság életminőségét is javítsa. A következő fejezetekben részletesen bemutatjuk azokat a konkrét projekteket és kezdeményezéseket, amelyek már most is érezhető hatással vannak Kárpátalja turisztikai vonzerejére.

A tanulmány célja, hogy bemutassa milyen hatással vannak a határokon átnyúló nemzetközi projektek Kárpátalja gazdaságára, s ezen belül is a pozitív hatásaikat a turizmusra, mely szoros kapcsolatban van a területfejlesztéssel.

A tanulmány elkészítéséhez elsősorban szekunder kutatási módszert alkalmaztam, felkutatva és elemezve a lehető legtöbb szakirodalmat és adatbázist. A primer kutatási módszer alapjául egy kérdőíves felmérés szolgált, mely a nemzetközi projektekben részt vevő kárpátaljai állami és civil szervezetek (13 szervezet nyilatkozott) képviselői körében zajlott. A kérdőívek által gyűjtött válaszok segítenek részletesebb képet kapni arról, milyen kihívásokkal kellett szembenézniük ezeknek a turisztikai szereplőknek az utóbbi időszakban, és hogyan alkalmazkodtak szinte naponta a változásokhoz, miközben egy globális méretű negatív esemény (Covid-19) sújtotta őket, majd ezt követően két lokális geopolitikai esemény (2014-es Donyecki és Luhanszki események, majd a 2022-es orosz-ukrán háború kitörése) rémálomszerű hatásai alá kerültek.

### **1. Az Egán Ede Kárpátaljai Gazdaságfejlesztési Központ Jótékonyági Alapítvány pályázatai**

2016-ban írta ki először pályázatait lebonyolítóként az Egán Ede Kárpátaljai Gazdaságfejlesztési Központ Jótékonyági Alapítvány (<https://eganede.com/?q=node/17>), melyet követően még 2017-ben, illetve 2019-ben is volt lehetőségük a kárpátaljai magyar gazdasági szereplőknek fejlesztési forrásokra pályázni. A pályázatokat az Egán Ede-tervben lefektetett irányvonalak (ágazati kitörési pontok) mentén 3 területen hirdették meg: a vállalkozásfejlesztés, a mezőgazdaság, illetve a turizmus területén. Kivételt csak a 2017-es év jelent, amikor turisztikai pályázatot nem írtak ki. (<https://eganede.com/?q=palyazati-felhivasok&l=hu>)

Jogosultsági feltételként szabták meg, hogy csak a már hivatalosan bejegyzett vagy a – támogatási szerződés megkötéséig – bejegyzést vállaló gazdasági szereplők (egyéni vállalkozók vagy kkv-k) nyújthatnak be pályázatot. Ez a követelmény elősegítette az Egán Ede-terv azon céljainak teljesítését, melyek a (hivatalos) kárpátaljai magyar gazdasági közösség megteremtésére és megerősítésére, a vállalkozóvá válás ösztönzésére, és értelemszerűen a magyar érdekeltségű vállalkozások számának növelésére irányultak. Ez egyrészt jelentős bevételeket generált az ukrán központi költségvetés részére, másrészt pedig a magyar vállalkozók körében kívánt meg alkalmazkodást az új helyzethez. A vállalkozási tevékenység tartós működése érdekében a pályázóknak egy hosszabb (jellemzően 5 éves) fenntartási időszakot, illetve elidegenítési tilalmat kellett vállalniuk a pályázat tárgyára. Ez a visszaélések lehetőségének minimalizálása mellett az otthonmaradás ösztönzését is szolgálta. A pályázók projektjeik teljes költségének 80%-ára kaphattak maximum támogatást, azaz legalább 20%-os önrészt kellett vállalniuk. Ezt a követelményt ugyanakkor 2017-től a nagycsaládos pályázók vonatkozásában 10%-ra csökkentették. Az értékelési szempontoknál

ugyanakkor – arányosan – előnyben részesítették azokat a pályázatokat, melyeknél a meghatározott minimumnál nagyobb hányadban használtak fel saját pénzügyi erőforrást. A kiírás feltételként szabta meg, hogy a beszerzendő – szigorúan új – termék forgalmazójának magyarországi vagy ukrainai bejegyzésű cégnek kellett lennie. Ez közvetlen vagy közvetett módon (pl. magyarországi termékek ukrainai piacon való megjelenése, vagy a pályázat keretében Magyarországon megvásárolt eszközök által ukrainai fogyasztók ellátása) segítette az Egán Ede-terv stratégiai céljai között felállított híd szerep betöltését a magyarországi és ukrainai gazdasági szereplők között. A magyar és az ukrán vállalkozói réteg erősítését, közvetett támogatását szolgálta az a pályázatértékelési szempont is, mely előnyben részesítette a magyar vagy ukrán gyártmányú termékek beszerzését a pályázat során.

Az első, 2016-os kiírás során a turizmus területén a magasabb megpályázható támogatási összeg (maximum 4,5 millió Ft) és az infrastrukturális fejlesztés lehetősége volt vonzó a pályázók számára, így a beruházási kategória (a benyújtott pályázatok több mint 70%-a) volt a népszerűbb az eszközbeszerzéssel szemben. Turisztikai fejlesztési céllal a kategóriára jutó összes támogatás több mint háromnegyede (összesen több mint 336 millió Ft) a Beregszászban és a Beregszászi járásban tevékenykedő magyar vállalkozók számára lett odaítélve 114 sikeres pályázat keretében. (Egán Ede, 2023a)

Az előző évhez képest 2017-ben turizmus kategóriában nem írtak ki pályázatot.

Az eddigi legutolsó, 2019-es pályázati körbe ismét visszakerült a turizmus. A 3 év kihagyás után újra meghirdetett turisztikai kategóriában – a 2016-os pályázati ciklus negatív tapasztalatai után – leszűkítették a pályázók körét azon vállalkozókra vagy vállalkozásokra, amelyek szálláshelyei rendelkeztek a Kárpátaljai Magyar Turisztikai Tanács által kiadott „falusi vendégház” minősítéssel. A legmagasabb támogatási összeget (5 millió Ft) ebben az évben az e vendégházakon eszközölni kívánt beruházásokra lehetett igényelni. Az előző, rendkívül sikeres 2017-es pályázati kiírások után 2019-ben jelentősen, (mintegy harmadával) visszaesett az érdeklődés és a benyújtott pályázatok száma. A visszaesés egyik oka értelemszerűen a kárpátaljai magyarság körében a gazdálkodási tevékenységek között kisebb részesedéssel bíró turisztikai szektor pályázati kategóriáinak – a másik két területhez mérten – alacsonyabb számaiban keresendő. (Egán Ede, 2023b)

## **2. Interreges pályázatok**

Az Interreg program az Európai Unió regionális fejlesztési politikájának egyik fontos pillére, amely a határokon átnyúló együttműködést és a regionális integrációt hivatott elősegíteni. Az

Interreg program különböző szakaszai az EU bővülésével és a regionális politikai célok fejlődésével párhuzamosan alakultak.

A Római Szerződésben (1957) is megfogalmazott, de a gyakorlatban igazán a 70-es évektől fontossá váló regionális politika „...a gazdasági tevékenységek befolyásolása és a régiók közötti társadalmi gazdasági különbségek mérséklése érdekében történő beavatkozás” (Kengyel, 2008: 57. old.). Az 1986-ban aláírt Egységes Európai Okmányban a gazdasági és társadalmi kohézió céljának az egyes régiók közötti egyenlőtlenségek csökkentését és a leghátrányosabb helyzetben lévők felzárkóztatását tekintik. A Lisszaboni Szerződésben a gazdasági és társadalmi kohézió fogalma pedig kiegészül a területi kohézió definíciójával is, mely a területi fejlődés kiegyensúlyozottabbá és fenntarthatóbbá tételét állítja a középpontba. (Fejes Norbert, 2023)

Azt követően tehát, hogy az Egységes Európai Okmányban először megfogalmazódott a gazdasági és társadalmi kohézió szükségessége az átfogó, harmonikus fejlődés előmozdítása érdekében, 1989-ben elindult a kohéziós politika első négyéves (1989-1993) tervezési időszaka, mely először kezelte integráltan az egyes strukturális alapokat.

Az egyik ilyen közösségi kezdeményezés az INTERREG volt, melynek irányelveit a Bizottság 1990 márciusában fektette le. Az egységes piac kilátásba helyezésével az INTERREG célja az volt, hogy a Közösségen belüli határregiónok közötti együttműködést erősítse, valamint segítse a külső határain lévő területeket a távoli elhelyezkedésükből adódó problémák leküzdésében (EUR-Lex, 1990.11.15., COM (90) 516, 47. o., 54. o.).

A Bizottság 1990. július 25-i ülésén aztán döntés született az INTERREG közösségi kezdeményezés létrehozásáról, melynek irányelveit és fejlesztési céljait a C (90) 1562/3 számú Közleményben fogalmazták meg a tagállamok részére:

- a Közösség külső és belső határ menti területeinek a támogatása a viszonylagos izoláltságukból adódó fejlődési problémák leküzdésére, a helyi lakosság érdekeit szem előtt tartva és a környezetvédelemmel összeegyeztethető módon;
- a Közösség belső határain átívelő együttműködési hálózatok létrehozásának és fejlesztésének a támogatása;
- a külső határok menti területek alkalmazkodásának elősegítése azon új szerepükhöz, hogy az egységes integrált piac határterületeivé váltak;
- a harmadik országokkal folytatott együttműködés új lehetőségeire való reagálás a Közösség külső határ menti területein.

Az Interreg programnak három fő ága létezik:

- Interreg A (határon átnyúló együttműködés),

- Interreg B (térségi együttműködés) és
- Interreg C (nemzeti és regionális együttműködés).

Az A típusú projektek a szomszédos országok határmenti területein valósulnak meg, és céljuk a közös problémák megoldása, míg a B típusú projektek a nagyobb földrajzi területeket célozzák meg. A C típusú projektek a nemzeti és regionális határokon átívelő együttműködést segítik elő, támogatva a tapasztalatcserét és a legjobb gyakorlatok megosztását.

A Bizottság 1994 júniusában hozta létre hivatalosan az új fejlesztési időszakra az INTERREG II-t. A kezdeményezésnek két különálló ágat határoztak meg: a határon átnyúló együttműködést, valamint az energiahálózatok kiépítését (EUR-Lex, 01.07.94, 94/C 180/13).

Az INTERREG III célja továbbra is az volt, hogy a nemzeti határok ne akadályozzák az Unió területének kiegyensúlyozott fejlődését és integrációját. Az új időszak INTERREG programja három szálon futott: határon átnyúló (A), transznacionális (B) és interregionális (C) együttműködések. A tagállamok és a harmadik országok határterületei közötti fellépés is középpontba került, így jelentős figyelmet kívántak fordítani a Közösség külső hatáira (különösen a bővítés perspektíváját szem előtt tartva) (EUR-Lex, 2000.04.28., 2000/C 143/08).

Az Európai Területi Együttműködés INTERREG V név alatt 2014-2020 között is az EU kohéziós politikájának egyik fontos célkitűzése maradt, melynek ERFA általi támogatását az Európai Parlament és a Tanács 1299/2013/EU számú Rendelete foglalta keretbe. Rögzítette, hogy az EU harmonikus fejlődése érdekében támogatni kell a határokon átnyúló, a transznacionális és az interregionális együttműködést. A határokon átnyúló együttműködési programok keretében a határ menti régiókban azonosított közös kihívások leküzdését, a még feltáratlan növekedési lehetőségek kiaknázását és a köztük lévő együttműködés erősítését tűzték ki célul.

A nemrégiben zárult 2014-2020-as és a jelenleg futó 2021-2027-es fejlesztési időszakban Ukrainát érintő öt Interreg Programból (a Fekete-tengeri, a HUSKROUA, a PLBYUA és a ROUA Határon Átnyúló Együttműködési Programok, valamint a Duna Transznacionális Program) Kárpátalja négyben – egyedül a Fekete-tengeri programban nem – képezte, illetve képezi a programterület részét. Ennél ugyanakkor már jóval korábban élhetett Ukrajna és vele együtt Kárpátalja is az EU által biztosított források lehetőségével. Az Európai Unió 2004-es bővítésével ugyanis Ukrajna nyugati szomszédjai – Lengyelország, Szlovákia és Magyarország – a közösség tagjaivá váltak, mely a legnyugatibb ukrajnai területek (megyék), és így Kárpátalja előtt is megteremtette a lehetőséget az Interreg programokban való részvételre már a 2000-2006 közötti fejlesztési ciklusban. Ukrajna és vele együtt Kárpátalja –

a szomszédos országok (Magyarország, Szlovákia, Lengyelország) 2004-es uniós tagfelvételét követően – már a 2000-2006 közötti fejlesztési ciklusban is részesülhetett az INTERREG III azon szegmenséből, mely a szomszédos határrégiók nemzetközi együttműködése révén kívánta elősegíteni a regionális integrációt és fejlődést. A határon átnyúló együttműködési programok közül ugyanis Kárpátalja a Magyarország-Szlovákia-Ukrajna (HUSKUA), illetve a Lengyelország-Ukrajna-Belarusz (PLUABY) Szomszédosági Programokban is érintett volt.

A HUSKUA Szomszédosági Program – melynek területe magánban foglalta Magyarországot mind a hét északi megyéjét, Budapestet, Szlovákia déli kerületeit, valamint Ukrajnából egyedülként Kárpátalját – az üzleti szolgáltató szféra fejlesztését, a kkv-k támogatását, a kapcsolatépítést, a közös tervezést, a határ menti vidékfejlesztést, valamint a környezet- és természetvédelmi együttműködést, illetve a térség kisléptékű közlekedési infrastruktúrájának fejlesztését helyezte előtérbe (VÁTI, 2004-2006).

A PLUABY Szomszédosági Programra is egy rövidebb, nem teljes fejlesztési ciklus jutott 2004-2006 között. Ebből következően a költségvetési keret is jelentősen kisebb volt (58,4 millió euró), mint a következő két teljes programozási időszak során rendelkezésre bocsátott (203,6 millió euró 2007-2013 között, illetve 201,4 millió euró 2014-2020 között). Az időszakok finanszírozási közötti lényeges különbség még, hogy az első, rövid ciklusban az EU a költségek 80%-át, míg a következő két programozási időszak során a kiadások 90%-át biztosította. 2 prioritást fogalmaztak meg: 1) a határ menti régiók versenyképességének növelését a határon átnyúló infrastruktúra korszerűsítésével és fejlesztésével; 2) a humán tőke és a határon átnyúló együttműködés intézményi formáinak fejlesztését és az EU határain a biztonság javítását.

A 2007-2013 közötti első teljes fejlesztési ciklusban is – az előző időszakhoz hasonlóan – két, a határ menti területek együttműködését támogató program érintette Kárpátalja területét. A továbbra is három ország relációjában működő PLBYUA Program területébe újabb, kapcsolódó régiókat (megyéket) emeltek be Belarusból és Ukrajnából. A HUSKUA Program – amely az előző ciklusban inkább tűnt a későbbi magyar-szlovák Interreg Program előzményének – területe ugyanakkor lényegesen átalakult: a magyarországi, illetve szlovákiai területek számát jelentős mértékben redukálták, Ukrajnából további megyéket kapcsoltak be, valamint romániai régiók is a programterület részévé váltak.

Az immár „négyhatárrégiós” HUSKROUA programban – a PLUABY programhoz hasonlóan – megkülönböztettek egymástól jogosult területeket, valamint szomszédos területeket teljes részvétellel, illetve korlátozott részvétellel. A minősítés pedig a projektekben

való jogosultságokat is meghatározta. A teljes részvétellel bíró szomszédos területek szervezetei mindenféle korlátozás nélkül részt vehettek a programban, a korlátozott részvételi területek számára ugyanakkor bizonyos korlátozásokat határozott meg a Közös Munkacsoport. A négyhatárégiós program Közös Operatív Programdokumentuma egy-egy projekt partnerségének összeállítása kapcsán is felállított egy fontos kitételt. Az ENPI CBC Végrehajtási Rendelet 40. cikkének 1. pontja alapján ugyanis kimondta, hogy minden projekt esetében kötelező legalább egy ukrainai és legalább egy tagállami szervezetnek a részvétele (HUSKROUA CBC 2007-2013 KOP, 9-11. o.).

A 2014-2021 közötti Interreg időszak célkitűzései között szerepelt a gazdasági növekedés elősegítése, a környezeti fenntarthatóság biztosítása, valamint a szociális befogadás és a társadalmi innováció ösztönzése. A projektek támogatják a regionális innovációt, a digitális átállást, valamint a munkahelyteremtést. A prioritások közé tartozott a közlekedési infrastruktúra fejlesztése, a turizmus népszerűsítése, a kulturális örökség védelme és a fenntartható fejlődés biztosítása.

A 2014-2020-as uniós fejlesztési programidőszakban Kárpátalja – a négyhatárégiós és a PLBYUA Program mellett – egy újabb, a Románia-Ukrajna (ROUA) Program része lett.

A HUSKROUA Program területe az előző időszakhoz képest érdemben nem változott: továbbra is a korábbi hét megye alkotta az alaptérséget, melyhez három régió teljes vagy korlátozott részvételi joggal rendelkező szomszédos térségként csatlakozott. A korlátozott részvételi joggal rendelkező térségek csak magyarországi vagy szlovákiai partnerekkel közösen vehettek részt projektekből.

A PLBYUA Program területe csupán az alap- és szomszédos térségek összetételében, határvonaláiban változott minimálisan (JTS of the PLBYUA CBC Programme, 2014-2023, 7-13. o.). Az eltérő besorolású területek jogosultságai között ugyanakkor már nem volt érdemi különbség, mindkét típusú terület intézményei egyenlő feltételekkel vehettek részt a Programban.

Kárpátalja számára tehát a leglényegesebb változást – az előző fejlesztési ciklushoz képest – a ROUA Programban való részvétel jelentette a 2014-2020-as időszakban. A ROUA Program területe összesen 9 alaptérségből, és – a négyhatárégiós programhoz hasonlóan – a legjelentősebb társadalmi, gazdasági és kulturális központokból (két főváros) tevődött össze.

### **HUSKUA Szomszédási Program 2004-2006**

A projektek túlnyomó többsége magyar-szlovák együttműködésben valósult meg, illetve a két uniós tagország területét érintette, amit már a programterület is előrevetített. Ez alapján a

Program inkább tűnik a későbbi Magyarország-Szlovákia (HUSK) Határon Átnyúló Együtműködési Program előzményének, mint a négyhatárregiós HUSKROUA Programénak. (JTS of the HUSKUA Programme, 2004-2006)

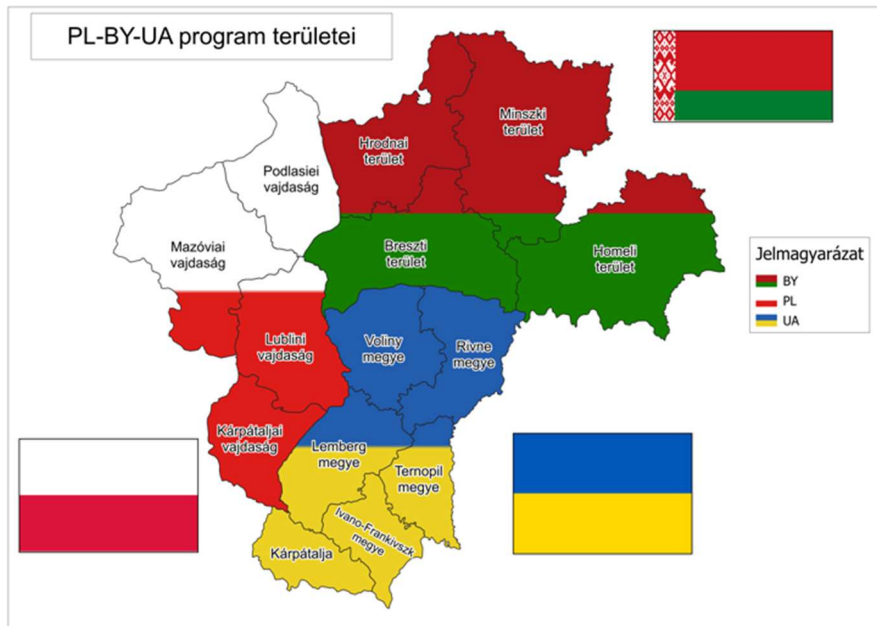
A kárpátaljai szervezetek csupán kevés projektben voltak közvetlenül támogatottak, hiszen csupán 4 projekt esetében rendel a dokumentum költségvetési tételt egy-egy kárpátaljai székhelyű szervezet mellé összesen mintegy 51,5 millió forint és kb. 550 ezer euró értékben. E 4 projekt közül kettő környezetvédelmi tematikájú (megújuló energia, illetve árvízvédelem és vízgazdálkodás) tanulmány, illetve terv elkészítésére, 1-1 projekt pedig egészségügyi, illetve turisztikai fejlesztésre (turisztikai információs központ létrehozása) irányult. Ezen túl még 17 olyan projekt valósulhatott meg, amelyben valamilyen formában – közvetlenül (a projektvégrehajtásban szerepet vállalt kárpátaljai szervezet) vagy közvetve (pl. kárpátaljai szereplőket hívtak meg egy-egy képzésre vagy más típusú rendezvényre; egyes környezetvédelmi, tervezési vagy infrastrukturális projektek Kárpátalja területét is érintették) – Kárpátalja is bevonásra kerülhetett. A kárpátaljai szervezetek zöme ungvári székhellyel rendelkezett, de akadt – helyi magyar kötődésű – munkácsi és beregszászi résztvevője is a projekteknek. A kárpátaljai érintettségű projektek között volt környezetvédelmi, turisztikai, vállalkozási és gazdasági együttműködési, oktatási, illetve infrastruktúra-fejlesztési tárgyú projekt is (VÁTI, 2004-2006).

A kárpátaljai szereplők számára az uniós programozás és fejlesztéspolitika ekkor még egy új, addig nem tapasztalt terep volt.

### **A PLUABY Szomszédsági Program**

A program indulásának 15. évfordulójára megjelentetett kiadvány szerint a 2004-2006 közötti időszakban összesen 167 projekt valósult meg. A két EU-n kívüli ország közül az ukrain szervezetek bizonyultak motiváltabbaknak a programban való részvételre, ugyanis a nyugat-ukrain intézmények a projektek 68%-ának megvalósításában vállaltak szerepet, szemben a belorusz intézmények alacsony részvételi mutatójával (a projektek 26%-a). Kárpátalja 2 vezető kedvezményezettet biztosított a program megvalósítása során. Megjegyzendő, hogy a leggyakrabban kormányzati, illetve önkormányzati testületek jelentkeztek támogatásért, illetve projektmegvalósításért mindhárom országból. Népszerű terület volt a kulturális örökség megőrzése (25 projekt), valamint a közlekedési infrastruktúra fejlesztés is (28 projekt) (JTS of the PLBYUA CBC Programme: 2014-2020).

### 1. ábra: PLUABY CBC területi megoszlása



Forrás: Forrás: JTS of the PLBYUA CBC Programme: 2014–2020 – saját szerkesztés

A fenti kiadvány nem közöl részletesebb információkat az egyes szervezetekre jutó költségkeretekről, ezért nagyon nehéz bármilyen pontos megállapítást, illetve következtetést levonni a program és Kárpátalja vonatkozásában.

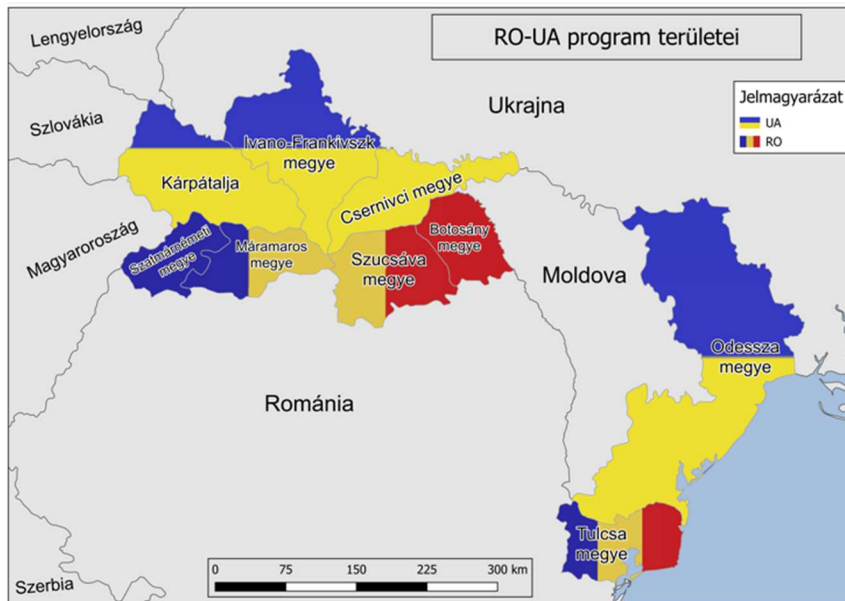
A PLBYUA Program keretében 2007-2013 között összesen 117 projekt valósult meg. A projektek mintegy 40%-a a határon átnyúló együttműködés regionális és helyi lehetőségeinek fejlesztését ösztönözte. A leggyakoribb partnerség a kétoldalú ukrán-lengyel reláció volt (74 projekt, az összes projekt több mint 60%-a). Háromoldalú (ukrán-lengyel-belorusz) partnerség csupán 14 projektben jött létre. Mindössze 1 projektben volt kárpátaljai partner vezető kedvezményezett (JTS of the PLBYUA CBC Programme: 2014-2020). Ez egy fejlesztési ügynökség volt Nagyszőlősről, a projekt célkitűzése pedig az intézmények nemzetközi együttműködése és az egészségügyi szolgáltatások fejlesztése volt. További 6 másik projektben vett részt még 8 kárpátaljai szervezet projektpartnerként. A fentiek alapján megállapítható, hogy a lengyel-belorusz-ukrán együttműködésben megvalósuló program a 2007-2013 közötti időszakban sem generálhatott számottevő fejlődést Kárpátalján a csekély számú projektben való részvétel és az ezáltal a megyébe érkező alacsony támogatási összeg miatt.

A 2014-2020-as adatok pontatlan és eltérő, gyakran hiányos fellelhetősége miatt feltételezhetően 158 projekt valósulhatott meg/áll megvalósítás alatt a Program keretében. Ebből 16 érintette valamilyen formában Kárpátalját.

## ROUA Szomszédsági Program

A 2014-2020 között futó román-ukrán (ROUA) program esetében sem Kárpátalja volt a fő célterület.

### 2. ábra: RO-UA CBC területi megoszlása



Forrás: JTS of the ROUA CBC Programme: 2014–2020 – saját szerkesztés

A kevés számú „hard” és „soft” típusú projekt mellett ugyanis nagy infrastrukturális projekt nem érintette a régiót. A négy kárpátaljai vezetésű projektben három esetben ungvári, egy esetben rahói intézmény volt a fő kedvezményezett. Ungvár városa a projektpartnerek számában is kiemelkedik (több 50%-os részarány), mellette a román határhoz közelebb eső területek, a Técsői, illetve a Rahói járások szervezetei vállaltak szerepet. A Beregszász járás egy projektben volt érintett. A támogatások megoszlását tekintve ugyanakkor változik a helyzet, a legtöbb uniós támogatás ugyanis e program keretében – 1,4 millió eurót meghaladó értékben – a Rahói járásba érkezett a 2014-2020-as fejlesztési ciklusban. A tematikus célkitűzések szerint a Programból a legtöbb uniós forrás (a Kárpátaljára jutó hozzájárulások közel 40%-a) az egészségügy területét célozva érkezett a megyébe. Viszonylag nagyobb összegű – de az egészségügyre jutó források nagyjából fele – jutott kulturális projektekre, illetve katasztrófa megelőzésre és vészhelyzetkezelésre. (JTS of the ROUA CBC Programme: 2014-2020)

### A HUSKROUA négyhatárrégiós program

2007-2013 között a három pályázati kiírás során összesen 138 projekt valósult meg. Ezek közül 135 normál és 3 ún. „nagy volumenű” projekt kapott támogatást. Ez utóbbiak

mindegyike zömében infrastrukturális fejlesztés volt és magában foglalta a magyar-ukrán, a szlovák-ukrán és a román-ukrán határátkelőhelyek modernizálását, felújítását, az átkelők megközelíthetőségének javítását, eszközbeszerzést és képzéseket. A 3 projekt egyenként 7,5 millió eurós költségvetéssel és 6,8 millió eurós uniós finanszírozással került megvalósításra. A 3 nagy volumenű projektre az EU által nyújtott támogatásból Kárpátalja, nevezetesen a Csapi Vámhivatal közel 10 millió eurót kapott a határátkelőhelyek kárpátaljai oldalainak fejlesztésére, modernizálására. A programdokumentumban megfogalmazott elvárás (kötelező ukrajnai partner) és a program szempontjából előnyös földrajzi elhelyezkedés folytán Kárpátalja a 3 nagy volumenű projekt mellett további 114 projektben (a támogatott projektek 85%-ában) volt érintett összesen 167 szervezettel (néhány szervezet több projektben is részt vett). (JTS of the HUSKROUA CBC Programme: 2007-2013)

Emellett környezetvédelmi célzatú, a vészhelyzetek kezelésére való felkészítést, illetve az intézmények közötti határon átnyúló együttműködést, a kapcsolatteremtést és -építést előtérbe helyező projektek valósultak meg a legnagyobb értékben EU-s támogatásból. Bár a gazdaság- és turizmusfejlesztési tengelyre irányozták elő a legkevesebb támogatást 2007-2013 között, ennek ellenére némileg meglepő, hogy a kárpátaljai szervezetek az ezen prioritásra szánt támogatási keretösszeget használták ki a legkevesebbé (a támogatási keret 30%-a érkezett Kárpátaljára) az összes prioritást figyelembe véve. (JTS of the HUSKROUA CBC Programme: 2007-2013)

Kárpátalja szempontjából – a korábbi évekhez hasonlóan – 2014-2020-as kiírásban is a négyhatárrégiós program keretében érkezett messze a legtöbb uniós támogatás és a projektek több mint 4/5-e kárpátaljai szervezet részvételével valósult meg. Lényegesen kevesebb projektre (65 db a 117 db helyett) oszlott szét az EU-s támogatás, mint a korábbi kiírásban. Ez azt eredményezte, hogy a 2014-2020-as fejlesztési ciklusban nagyobb volumenű projektek kerülhettek megvalósításra a HUSKROUA program keretében. (JTS of the HUSKROUA CBC Programme: 2014-2020)

A Program honlapján található információk szerint a 2014-2020-as fejlesztési ciklusban 3 pályázati felhívás keretében 2 típusú projektre lehetett uniós támogatást nyerni: Nagy Infrastrukturális Projektekre, illetve hagyományos méretű, normál projektekre.

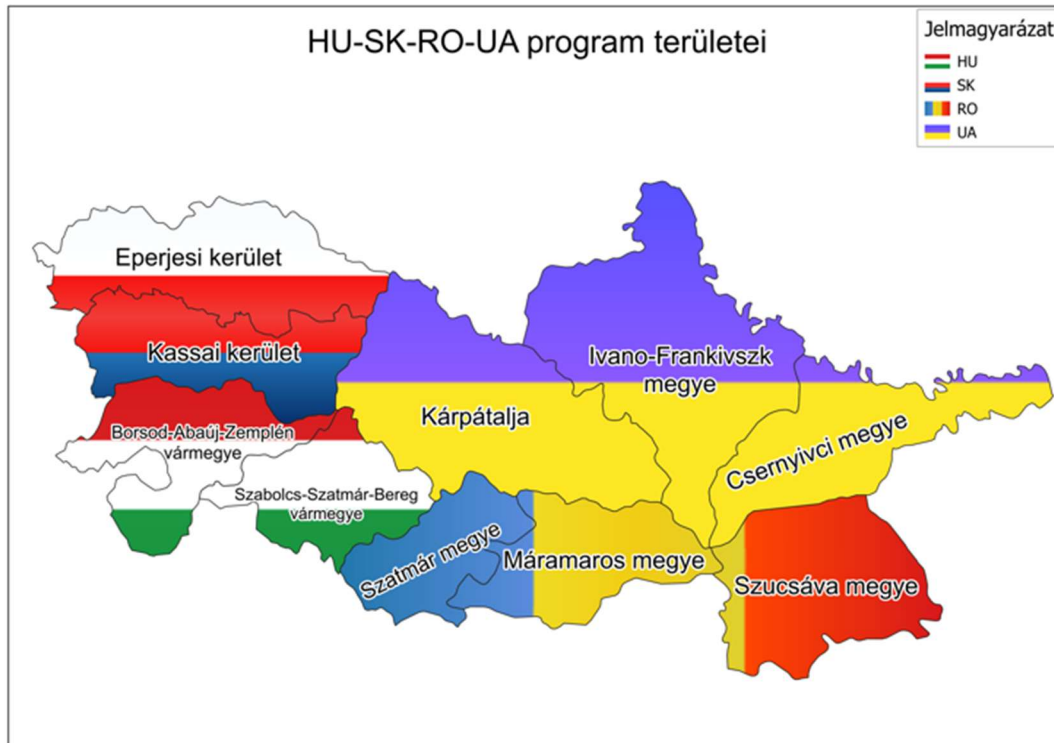
A Program honlapja alapján négy Nagy Infrastrukturális Projekt nyert el 15,6 millió euró értékű uniós támogatást. A projektek közül kettő a környezetvédelmi, egy-egy projekt pedig a közlekedés-fejlesztési, illetve a katasztrófa-megelőzési, illetve vészhelyzet-kezelési prioritások mentén valósult meg.

Normál méretű projektekből a második felhívás alkalmával 46 (32,8 millió euró uniós finanszírozással), míg a harmadik felhívás során 28 projektet (18 millió euróval) támogattak. A legtöbb, 22 normál projektet (az összes normál projekt 30%-át) a kultúra és örökség prioritás mentén valósították meg.

A normál méretű projektek közül 61 valósult meg kárpátaljai szervezet részvételével. E projektek keretében a 90 kárpátaljai partner összesen 16,8 millió euró uniós támogatásban részesült.

A 61 kárpátaljai részvétellel megvalósuló normál méretű projektet és – az ezek keretében – a megyébe érkező támogatásokat tematikus célok, illetve főbb tématerületek szerint vizsgálva egyértelműen kitűnik, hogy a legtöbb uniós hozzájárulás (a megyébe a normál projektek finanszírozására érkező források több mint negyede) az egészségügyi és szociális szolgáltatások fejlesztését szolgálta Kárpátalján. Számottevő forrás jutott még ugyanakkor turisztikai fejlesztésekre, kulturális és művészeti kezdeményezésekre, a közlekedési kapcsolatok javítására, valamint katasztrófa-megelőzésre is. (JTS of the HUSKROUA CBC Programme: 2014-2020)

### 3. ábra: A HUSKROUA programok területi eloszlása



Forrás: JTS of the HUSKROUA CBC Programme: 2014–2020 – saját szerkesztés

Összegezve, a négyhatárregiós program 2014-2020-as fejlesztési ciklusára megítélt összes uniós támogatás (66,4 millió euró) harmada (22,2 millió euró) érkezett Kárpátaljára 61 normál és 4 Nagy Infrastrukturális Projekt keretében. Kárpátaljai partnerséggel valósult meg (vagy van még folyamatban) tehát az összes projekt (78 db) közel 85%-a. A többi, Kárpátalját érintő Interreg Programmal összevetésben, mindez azt jelenti, hogy a HUSKROUA Program bizonyul – fejlesztési ciklusokon keresztül – a legjelentősebb uniós támogatási eszköznek a megye szervezetei, intézményei számára. (JTS of the HUSKROUA CBC Programme: 2014-2020)

### **3. A turisztikai pályázatok jellegzetessége**

Turisztikát valamilyen formában érintő EU-s projektek 5 nagyobb irányzatra oszthatóak fel:

1. Szakrális felújítás
2. Innováció
3. Folklor
4. Műemlék felújítás
5. Alap infrastruktúra fejlesztés

Irányzatonként az alábbi változások tapasztalhatóak az elmúlt bő egy évtized alatt megvalósult pályázatok eredményeiként:

#### **Szakrális felújítás, avagy vonzerő fejlesztés**

A HUSKROUA program alatt számos jelentős projekt valósult meg, amelyek a szakrális épületek felújítására irányultak. Például a Kárpátaljai Református Egyház templomainak felújítása kiemelkedő példája volt a program sikerének. A projekt keretében több templom tetőszerkezetét és belső terét újították fel, ezzel nemcsak a vallási közösségek számára biztosítva a megfelelő körülményeket, hanem hozzájárulva a turizmus fejlesztéséhez is. Ilyen volt az ungvári Görögkatolikus Székesegyház helyreállítása és rekonstrukciója is. A projekt eredménye rekonstruált műemlék, ami kulcsfontosságú a látogatók számának növeléséhez.

A beregszászi és nyíregyházi Római Katolikus Egyház együttműködése is egy hasonló jellegű projektet eredményezett. A projekt kettős kihívással kívánt szembenézni: a kulturális örökség megőrzésével és a turisztikai tevékenységek javításával a határ menti térségben. Mind Nyíregyházán, mind Beregszászban harangtoronyokat kívánnak majd használni kilátópontként. Ehhez mindkét esetben fel kellett újítani és át kellett alakítani a lépcsőházat és a hozzá tartozó belső tereket, Beregszászban teljes lépcsőrekonstrukcióval, a nyíregyházi harangvezérlő egység cseréjével egyetemben. Beregszászban a tető- és ereszcatorna-rendszer

javítása, valamint az épület körüli vízelvezető rendszer rekonstrukciója volt az első, amely megakadályozza az épület további romlását.

A felújítások során a helyi anyagok és hagyományos építési technikák alkalmazására is hangsúlyt fektettek, így a projektek fenntarthatósága is biztosítva volt. A közösségi részvétel különösen fontos volt a felújítások során, hiszen a helyi lakosok aktívan részt vettek a munkálatokban, ami nemcsak a projektek sikeréhez, hanem a közösségi összetartozás érzésének erősítéséhez is hozzájárult.

A szakrális épületek felújítása mellett a program célja volt a kulturális örökség megőrzése is. A felújítások során különös figyelmet fordítottak a helyi hagyományokra és a művészeti értékek megőrzésére. A program keretében végzett felújítások hozzájárultak a szakrális épületek esztétikai értékének növeléséhez és a helyi közösségek kulturális identitásának erősítéséhez. (JTS of the HUSKROUA CBC Programme: 2014-2020)

Ezek a felújítások nemcsak a látogatottság számának a növelését voltak hivatottak javítani, hanem egyúttal az emlékművek állagmegóvásának is eleget tettek.

### **Innovációk a promócióban és a termékfejlesztésben**

A HUSKROUA program keretein belül számos innovatív megoldást alkalmaztak Kárpátalján. Az egyik legfontosabb projekt a helyi látnivalók digitális promóciója volt, amelynek célja a térség turisztikai vonzerejének növelése volt. Digitális platformok létrehozásával és a közösségi média használatával a régió látogatottsága jelentősen megnőtt. A turisták számára elérhetővé váltak a helyi nevezetességek, programok és szolgáltatások, ezáltal javítva a látogatók tájékozódását. Virtuális múzeumok vagy épp kerékpárutak térképei váltak szintén elérhetővé.

Fontos kiemelni, hogy az innováció nem csak a technika új vívmányait hivatott bevetni a turizmusban, hanem egyúttal új attrakciók megvalósítását is eredményezte. Ilyenek például a gecsei pajtaszínház vagy épp a jurtamúzeum. (JTS of the ROUA CBC Programme: 2014-2020)

Egy másik fontos kezdeményezés a fenntartható turizmus előmozdítása volt. A program keretében olyan projektek valósultak meg, amelyek a helyi közösségek bevonásával valósultak meg, ezzel ösztönözve a helyi hagyományok és kultúra megőrzését. Például a helyi kézművesek és termelők bevonása a turisztikai ajánlatokba nemcsak a gazdaságot támogatta, hanem a látogatók autentikus élményben részesülését is lehetővé tette. (JTS of the HUSKROUA CBC Programme: 2014-2020)

## **Folklór**

A folklór, mint a közösségi identitás és kultúra megjelenítője, az egyik legfontosabb eleme a nemzeti örökségnek. A 2014 és 2021 közötti időszak különösen jelentős volt a folklór területén, hiszen számos pályázat indult, amelyek célja a helyi hagyományok, szokások és népművészet fenntartása és népszerűsítése volt. A HUSKROUA pályázatok számos formát ölthettek, beleértve a kulturális rendezvényeket, workshopokat, kiállításokat és előadásokat. A pályázók között helyi önkormányzatok, civil szervezetek, kulturális intézmények és közösségi csoportok szerepeltek. A projektek sokszínűsége tükrözte a határ menti régiók gazdag kulturális örökségét, amely magában foglalja a néptáncot, népzeneét, kézművességet és egyéb hagyományos mesterségeket. A HUSKROUA program során megvalósított folklór pályázatok jelentős hatással voltak a helyi közösségekre. Számos projekt sikerült, amelyek hozzájárultak a közösségi kohézió erősítéséhez és a hagyományok átörökítéséhez. A rendezvények és workshopok nemcsak a helyiek számára nyújtottak élményt, hanem lehetőséget teremtettek a különböző kultúrák közötti párbeszédre is. (JTS of the HUSKROUA CBC Programme: 2014-2020)

Ezen pályázatok révén a helyi művészek és kézművesek is kiemelkedő szerepet kaptak, hiszen munkájukat szélesebb közönség előtt is bemutathatták. A folklór rendezvények gyakran vonzották a turistákat, ezáltal gazdasági előnyöket is jelentettek a régió számára. Jelentős fellendülést hozott a rendezvényturizmus számára. Nagyobb tömegek voltak megfigyelhetőek minden egyes ilyen jellegű rendezvényen az utóbbi években egészen a háborúig. Mind a külföldi, mind a belföldi turisták számára egyre szélesebb körben ismertté váltak.

## **Műemlék felújítás**

A felújítások között szerepeltek várak, múzeumok és más jelentős épületek, amelyek nemcsak a történelmi értékek megőrzését szolgálták, hanem új turisztikai lehetőségeket is teremtettek a térségben. A projekt célja az volt, hogy a helyi közösségek bevonásával, fenntartható módon hozzájáruljanak a régió fejlődéséhez.

Ide tartoznak azok a pályázatok, melyek keretében történelmi műemlékek renoválása történt meg, tematikus útvonalakat jelöltek ki (KRA'GAS vagy épp a „Sóút” melynek keretében még 5 mini szobrot is kihelyeztek Kárpátalján).

Különböző várak, mint például a Técsői Vár, Huszti vár restaurálása is része volt a programnak, amely a turizmus fellendítését célozta.

Számos helyi múzeum, például a Kárpátaljai Magyar Múzeum, felújításon esett át, hogy modern kiállítási lehetőségeket kínáljon.

Különböző kulturális központok revitalizációja is része volt a programnak, amelyek helyi eseményeknek adnak otthont (JTS of the HUSKROUA CBC Programme: 2014-2020).

### **Alap infrastruktúra fejlesztés**

A HUSKROUA projekt keretében végzett infrastruktúra fejlesztések célja a határon átnyúló együttműködés elősegítése volt. A fejlesztések a következő kulcsterületeket célozták:

Az úthálózat és a közlekedési kapcsolatok fejlesztése alapvető fontosságú volt a gazdasági kapcsolatok élénkítése érdekében. A határátkelőhelyek korszerűsítése, az utak javítása és új közlekedési útvonalak kialakítása lehetővé tette a gyorsabb és hatékonyabb áruszállítást, valamint a személyforgalmat.

A vízellátás és szennyvízelvezetés korszerűsítése kiemelt feladat volt, különösen a vidéki települések esetében. A projekt célja a tiszta ivóvízhez való hozzáférés javítása, valamint a környezetszennyezés csökkentése volt.

Az energiahatékonyság növelése érdekében több megújuló energiaforrást integráltak a meglévő rendszerekbe. A projekt célja az volt, hogy csökkentse a fosszilis tüzelőanyagok használatát, és támogassa a zöld energiatermelést.

Az alpinfrastruktúra fejlesztése nemcsak a fizikai környezet javítását célozta, hanem a közszolgáltatások, mint például az oktatás, egészségügy és szociális ellátás modernizálását is. A kulturális központok és közösségi terek fejlesztése hozzájárult a helyi identitás erősítéséhez.

A program keretében végrehajtott fejlesztések közé tartozik számos útszakasz felújítása és korszerűsítése, amely lehetővé tette a könnyebb és gyorsabb közlekedést a határ menti települések között. Az új utakkal csökkent a közlekedési balesetek száma és javult a közlekedési biztonság.

A határátkelők korszerűsítése csökkentette a várakozási időt és javította az áruforgalmat. Az új vámkezelési rendszerek és technológiák bevezetése gyorsabbá és hatékonyabbá tette a határon való átlépést.

Több település víz- és csatornahálózatának fejlesztése zajlott, amely javította a helyi lakosság életkörülményeit és egészségét. Az új szennyvíztisztító telepek telepítése hozzájárult a környezeti szennyezés csökkentéséhez.

A projekt keretében napelem- és szélenergia-berendezések telepítése is történt, amelyek segítettek csökkenteni az energiafogyasztás költségeit és környezeti lábnyomát.

A kulturális és közösségi terek fejlesztése lehetőséget adott a helyi közösségek számára, hogy aktívan részt vegyenek a kulturális életben. A központok modernizálása során új programokat indítottak, amelyek célja a helyi tradíciók megőrzése és bemutatása volt. (JTS of the HUSKROUA CBC Programme: 2014-2020).

#### **4. Innovációk bemutatása és jellemzése**

A HUSKROUA 2014-2021 program jelentős szerepet játszott a helyi közösségek fejlesztésében és a területfejlesztési innovációk előmozdításában. E program célja nemcsak a gazdasági és társadalmi együttműködés erősítése volt, hanem a fenntartható fejlődés és az életminőség javítása is. A következőkben részletesen bemutatom a területfejlesztési innovációkat, amelyek a program keretében valósultak meg, és amelyek hozzájárultak a régió fejlődéséhez.

A HUSKROUA program célkitűzései között szerepelt a gazdasági növekedés elősegítése, a helyi közösségek társadalmi kohéziójának erősítése, valamint a környezeti fenntarthatóság biztosítása.

A program négy fő irányvonal köré épült:

- a. Gazdasági fejlesztés: A helyi vállalkozások támogatása, innovatív megoldások bevezetése és a foglalkoztatás növelése.
- b. Környezetvédelem: Fenntartható megoldások alkalmazása az erőforrások kezelésében és a környezeti problémák kezelésében.
- c. Társadalmi szolgáltatások fejlesztése: Az oktatás, egészségügy és szociális ellátás javítása, különös figyelmet fordítva a hátrányos helyzetű csoportokra.
- d. Kultúra és közösség: A helyi kulturális értékek megőrzése és fejlesztése, valamint a közösségi élet erősítése.

A HUSKROUA program során a gazdasági fejlesztés érdekében számos innovációs megoldást vezettek be, amelyek célja a helyi vállalkozások versenyképességének növelése volt.

A program keretében vállalkozói inkubátorokat hoztak létre, amelyek célja a helyi vállalkozók támogatása volt. Ezek az inkubátorok szakmai mentorálást, képzéseket és üzleti tanácsadást kínáltak, lehetővé téve a fiatal vállalkozók számára, hogy sikeresen elindítsák és fejlesszék vállalkozásaikat. A helyi termelők és szolgáltatók számára rendezett workshopok és fórumok segítették a tapasztalatcserét és a hálózatosodást. (JTS of the HUSKROUA CBC Programme: 2014-2020)

A mezőgazdaság területén számos innovatív megoldást vezettek be, például a precíziós mezőgazdaság technológiáit. A program keretében gazdálkodók számára képzéseket szerveztek, amelyek során bemutatták az új technológiák alkalmazását, mint például a drónok használatát a földek monitorozására és a termés hozamok optimalizálására. E megoldások hozzájárultak a termelési hatékonyság növeléséhez és a fenntarthatóság erősítéséhez.

A környezetvédelem érdekében a HUSKROUA program számos fenntartható megoldást támogatott, amelyek célja a természeti erőforrások védelme és a környezetszennyezés csökkentése volt. (JTS of the HUSKROUA CBC Programme: 2014-2020)

A megújuló energiaforrások integrálása fontos része volt a programnak. A helyi közösségek számára napelem- és szélenergiaforrások telepítését támogatták, amelyek segítségével csökkenteni tudták az energiafogyasztás költségeit és környezeti lábnyomukat. A projekt keretében megvalósultak energiatakarékos programok is, amelyek célja az energiahatékonyság növelése volt, például az épületek szigetelésének javításával.

A hulladékkezelés terén is innovatív megoldásokat alkalmaztak, például szelektív hulladékgyűjtési programokat indítottak, amelyek célja a környezettudatosság növelése és a hulladék mennyiségének csökkentése volt. A helyi közösségek számára szervezett kampányok segítettek a tudatosság növelésében és a fenntartható életmód népszerűsítésében.

A társadalmi szolgáltatások fejlesztésére is nagy hangsúlyt fektettek, különös figyelmet fordítva a hátrányos helyzetű csoportokra.

Az oktatás fejlesztése érdekében a program keretében innovatív oktatási programokat indítottak, amelyek célja a helyi diákok képességeinek fejlesztése volt. Digitális tananyagok bevezetése, valamint online tanulási platformok kialakítása segítette a tanulást és a tudás megszerzését, különösen a járványhelyzet alatt. Az iskolák együttműködésével szervezett projektalapú tanulási programok is hozzájárultak a diákok aktív részvételéhez. (JTS of the HUSKROUA CBC Programme: 2014-2020)

Az egészségügyi szolgáltatások fejlesztése érdekében a helyi egészségügyi intézmények modernizálására és a telemedicina bevezetésére került sor. E megoldások lehetővé tették, hogy a lakosság könnyebben hozzáférjen az egészségügyi ellátáshoz, különösen a távoli területeken. Az egészségügyi kampányok és programok a helyi közösségek egészségtudatosságának növelését célozták.

A helyi kulturális értékek megőrzése és fejlesztése érdekében a HUSKROUA program számos innovatív megoldást támogatott. A program keretében különböző kulturális események és fesztiválok szervezésére került sor, amelyek célja a helyi hagyományok megőrzése és népszerűsítése volt. A fesztiválok nemcsak a kulturális örökség bemutatására

szolgáltak, hanem hozzájárultak a helyi gazdaság élénkítéséhez is, hiszen vonzották a turistákat és támogatták a helyi vállalkozásokat.

A közösségi terek fejlesztése szintén fontos része volt a programnak. Az új közösségi központok kialakítása lehetőséget adott a lakosságnak arra, hogy találkozzanak, együttműködjenek, és közös projekteket valósítsanak meg. E terek támogatják a helyi közösségi életet, erősítik a társadalmi kohéziót, és teret adnak a kulturális programoknak.

A program keretében végrehajtott területfejlesztési innovációk számos pozitív hatással jártak, amelyek a következő területeken mutatkoztak meg:

- a. Gazdasági növekedés: A helyi vállalkozások versenyképessége nőtt, új munkahelyek jöttek létre, és a gazdaság diverzifikálódott. Az innovatív mezőgazdasági megoldások és a vállalkozói inkubátorok hozzájárultak a helyi gazdaság fellendítéséhez.
- b. Környezetvédelem: A megújuló energiaforrások használata és a hulladékkezelési programok jelentősen csökkentették a környezeti terhelést. A helyi közösségek környezettudatossága növekedett, ami pozitívan hatott a természeti erőforrások védelmére.
- c. Társadalmi fejlődés: Az oktatási és egészségügyi programok révén a helyi lakosság életminősége javult. A közszolgáltatások fejlesztése és a hátrányos helyzetű csoportok támogatása hozzájárult a társadalmi kohézió erősítéséhez.
- d. Kulturális identitás: A kulturális események és közösségi terek fejlesztése erősítette a helyi identitást és a közösségi életet. A helyi hagyományok megőrzése és népszerűsítése hozzájárult a kulturális örökség megőrzéséhez.

A program számos új lehetőséget teremtett a helyi közösségek számára, és hozzájárult az országok közötti kapcsolatok erősítéséhez. A megvalósított innovációk nemcsak a jelenlegi problémák megoldását célozták, hanem hosszú távú fenntarthatóságot is biztosítottak a helyi közösségek számára. A program eredményei és hatásai hosszú távon is hozzájárulnak a határmenti térség fejlődéséhez és a helyi lakosság életminőségének javításához.

### **HU-SK-RO-UA innovációs pályázatai**

A HU-SK-RO-UA keretében több pályázat is innovatív tartalommal bírt a turizmus szempontjából. (JTS of the HUSKROUA CBC Programme: 2014-2020) Ilyenek voltak az alábbiak:

1. SmartMuseum - INTELLIGENS MÚZEUM, MINT A KULTURÁLIS ÖRÖKSÉG BEMUTATÁSÁNAK MÓDJA - 721,501.29 EUR - 3D-s galéria, s 3D-s túrák

tettek elérhetővé egy platformon. Nagy mennyiségű digitalizált kulturális örökségi tartalom vált elérhetővé a világhálón ezáltal.

Véleményem szerint ez nagyon pozitív hatással bír, mivel a fiatalabb generációkat is megszólítja a digitális térben.

2. COOLNET – KULTÚRA KAPCSOLAT – KULTURÁLIS MOBILITÁS A HATÁRMENTI TÉRSÉGBEN - 508,572.00 EUR - COOLMUSEUMS app elindítása (Google Playen elérhető), 8 tudományos kiadvány mellett egy olyan mobil applikáció vált elérhetővé, melyet bárki letölthet okoseszközzel, s máris teljes képet talál, hogy helyileg mit és hol talál.

Úgy gondolom, ez jelentősen elősegíti a területünkre látogatók megfelelő tájékozódását, hogy olyasmire is kíváncsivá váljanak, amit amúgy nem vagy csak véletlen felfedezés útján látogatnának meg.

3. KRA'GAS - A KÉZMŰVESSÉG ÉS A GASZTRONÓMIA, MINT A KÁRPÁTOK EURORÉGIÓ KULTURÁLIS ÖRÖKSÉGÉNEK FONTOS ELEMEI NÉPSZERŰSÍTÉSE - 581,954.68 EUR - kézműipar és gasztronómia területén 2 tematikus útvonal. Itt nem az útvonal ötlete az innovatív, hanem az, hogy antropológiai elemzéssel támogatták, majd a "kulturális turisták" speciális kategóriáját célozták meg. Így sikerült kiemelni a közös kulturális örökséget, segítve a régiót inkább közös kulturális területként, mint a helyi kultúrák összességéként. Ezt követően a régiót nem úti célok listájaként, hanem közös turisztikai célpontként népszerűsítik. A projekt abból indult ki, hogy a hagyományos termékek regionális piaci volumenének növekedése munkahelyeket és forrásokat biztosít az örökség megőrzéséhez, erősíti a regionális együttműködést, közelebb hozza a közösségeket és vékonyítja a három ország közötti választóvonalakat.

Számomra ez a projekt egy nagyon pozitív és élesmeglátású kezdeményezés, mivel a megfelelő célközönségnek találja a saját szája íze szerint a látnivalókat, s így valóban azokat éri el, akiket ez érdekel is.

4. SaltRoad - A TÖRTÉNELMI "SÓÚT" TURISZTIKAI VONZEREJÉNEK HELYREÁLLÍTÁSA - 344,626.40 EUR - A történelmi „Sóút” rekonstrukciója, s a mentén elhelyezkedő várak kutatása megyéken át, 5-5 miniszobor kihelyezése az utat jelezve. Első kiadvány megjelenése, mely elektronikusan is következik majd.

Itt felhívnam a figyelmet arra, hogy nem csak a sokak által ismert, s már-már unalmas munkácsi várról esik szó, hanem más végvárakról is (pl. huszti vár), melyek történelmünk fontos elemei voltak már a tatárjárás idején is.

5. MOBI - MODERN HATÁRINFRASTRUKTÚRA - SIKERES KÁRPÁTOK RÉGIÓ - 946,782.00 EUR - határátkelő helyek modernizálása a vízummentes határforgalom meggyorsítása érdekében, melynek köszönhetően megnövekedett és meggyorsult mind a személy- és mind a teherforgalom. Közel 4,4 ezer km kerékpárút kiépítését is megcélozta, hogy ezáltal is népszerűsítsék a környezettudatos közlekedést.

Ez a projekt pozitívan hatott a határátkelők műszaki felszereltségére, s a megépített kerékpárutaknak köszönhetően Szlovákia felől és felé megkönnyítette, s biztonságosabbá tette a személyi forgalmat a kerékpárosok számára, lehetőséget adva akár családok számára hétvégi kikapcsolódásként kerékpártúrákat szervezni.

6. ArtSpace - A HATÁRON ÁTNYÚLÓ KULTURÁLIS MŰVÉSZETI TÉR - 724,636.04 EUR - határokon átnyúló kulturális összefogás, fő feladata egy platform létrehozása a cél régiók népszerűsítésére, mint közös idegenforgalmi célpontra, amely alapját képezi a közös kulturális eseményeknek, a helyi idegenforgalmi termékek (kézműves termékek, borászat és gasztronómia) piaca megteremtésének, valamint a promóciónak és képzési tevékenységeknek a kulturális vezetők és a helyi termelők számára.

Ennek a projektnek az egyik nagy pozitív hatása, hogy a határ más-más oldalán élő szakembereket összehozta, ismeretanyag cserére, s szakmai megbeszélésekre adott lehetőséget egymást fejlesztve.

7. ReBuiltHeritage - A FELSŐ-TISZA ÉPÍTETT ÉS SZELLEMI ÖRÖKSÉGÉNEK TÁRHÁZA - 811,804.17 EUR, rendezvényturizmus eseményeinek bővítése, új helyszínek létrehozása, tájházak építése. A hagyományok őrzése és ápolása, ismeretanyagok cseréje határokon átívelő szakmai találkozók (workshopok) keretében, eltűnőben lévő szakmák (kovácműhelyek, lenvászon készítés, gyapot fésülés) újraélesztése

Nagyon fontos mérföldkövet tett le ez a projekt véleményem szerint, mivel Kárpátalján még nagyon sok helyen őrzik a hagyományokat, viszont nem volt biztosítva lehetőség, hogy művelőik szélesebb körben bemutassák, s tovább adhassák ezt az ismeretet az érdeklődőknek.

8. SMAR.T.OURISM - A KASTÉLYOK TEMATIKUS ÚTVONALA - 336,474.42 EUR - turisztikai információs pontok és irodák létrehozása a várak/kastélyok bemutatására minél szélesebb körben való ismertetésük céljából a tematikus útvonalon, minden érintett régióban

9. Carpathian Mobility - A HOZZÁFÉRHETŐSÉG ÉS A MOBILITÁS JAVÍTÁSA AZ SK-UA HATÁRRÉGIÓBAN - 1,033,842.47 EUR - kerékpárutak kiépítése és felújítása, a környezetbarát közlekedés népszerűsítése a környezet és a természeti kincsek megóvása céljából.

Mivel napjainkban nagy hangsúlyt fektetünk a fenntarthatóságra, a megújuló energiára. így ez a projekt nagy horderővel bír, mivel az elavult kerékpárutakat célozta meg, s nem csak felújították azokat, hanem ki is bővítették, valamint több töltőállomást telepítettek az elektromos autózás számára.

10. ANCESTORS - AZ ŐSÖK UTAZÁSA - 580,115.24 EUR - a történelem folyamán szétszakadt családok felkutatása és egyesítése genetikai alapon a hagyományok megőrzése végett. A hagyományok ismeretének megőrzése és továbbadása néprajzi központok létrehozásával.
11. Via Tisa - KÖZÖS TURISZTIKAI ÉRTÉKEK FELTÁRÁSA, FEJLESZTÉSE ÉS NÉPSZERŰSÍTÉSE, KÉPZÉS ÉS HÁLÓZATÉPÍTÉS A HATÁR MENTI TÉRSÉGBEN - 471,778.20 EUR - határokon átnyúló szakember képzések, ismeretek megosztása, új turisztikai attrakció létrehozása, népszerűsítése különböző média felületek segítségével. Új platformok kialakítása, mely a régió kulturális örökségeit még részletesebben és még szélesebb körben bemutatja, s népszerűsíti azt, ezáltal is még vonzóbbá téve a turisták számára.
12. CULTURE SPACES 4 EVENT TOURISM - A HELYI KULTURÁLIS ÉS TÖRTÉNELMI ATTRAKCIÓKRA ÉPÜLŐ RENDEZVÉNYTURIZMUS FEJLESZTÉSE NAGYECSED ÉS PERECHYN EGYÜTTMŰKÖDÉSÉBEN - 721,306.12 EUR - rendezvényturizmus feltételeinek kialakítása, s életre keltése 2 határmenti településen. Kissé lokálisabb jelleggel bír, viszont jelentős turisztikai vonzerő potenciált hordoz magában.

### **RO-UA innovációs pályázat**

Ezen pályázatok elsősorban az egészségügyre és a katasztrófa elhárításra fókuszáltak, viszont egy a turizmus számára fontos innovatív pályázatot mégis ki kell emelnünk:

1. SPOT – A Szamos-síkság közös kulturális és történelmi öröksége határokon átnyúló népszerűsítésének elősegítése - 257.380,65 EUR - új turisztikai attrakciók létrehozása, többek között a gecsei pajtaszínház megalapítása, mely egyedüli Kárpátalján a maga nemében. (JTS of the ROUA CBC Programme: 2014-2020)

#### 4. Előnyök és hátrányok a turizmus szempontjából

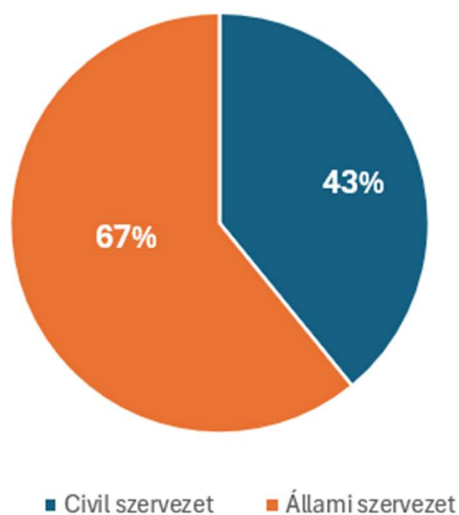
A pályázati időszak 2007-től napjainkig 3 szakaszra bontható a kiírások alapján.

Az első szakasz, amely 2007 és 2013 között zajlott, Kárpátalja 31 pályázatában vett részt, ezek közül 8 a turizmust érintette. E pályázatok előnye abban rejlett, hogy jelentős pozitív impulzusokat nyújtottak Kárpátalja turizmusban részt vevő szereplőinek az infrastrukturális fejlődés korai szakaszában, mivel a régió jelentős lemaradásban volt a szomszédos, már EU-tag határ menti területekhez képest. A hátránya abban rejlett, hogy a pályázható összegek nagysága miatt az önerő mértéke komoly terhet jelentett, így a kisebb vállalkozások nem tudtak részt venni a projektekben. Csak nonprofit szervezetek pályázhattak.

A második szakasz 2014 és 2020 között jelentős érdeklődést generált, különösen a turizmus területén. Ekkor Kárpátalja 66 pályázatban vett részt a HUSKROUA program keretében, ami a korábbi 8-hoz képest jelentős előrelépés volt. 38 projekt érintett közvetlenül vagy közvetve a turizmus szempontjából. Épp ezért fókuszál a kérdőív is erre az időszakra, s próbálja maximálisan lefedni a teljes régióban tevékenykedő szervezeteket.

Ennek a szakasznak is megvoltak a maga előnyei és hátrányai. Az előnyök között említhető, hogy több olyan szervezet alakult, amely összefogta a turizmusban érdekelt szereplőket (4. ábra), így lehetőség nyílt az önerő előteremtésére is.

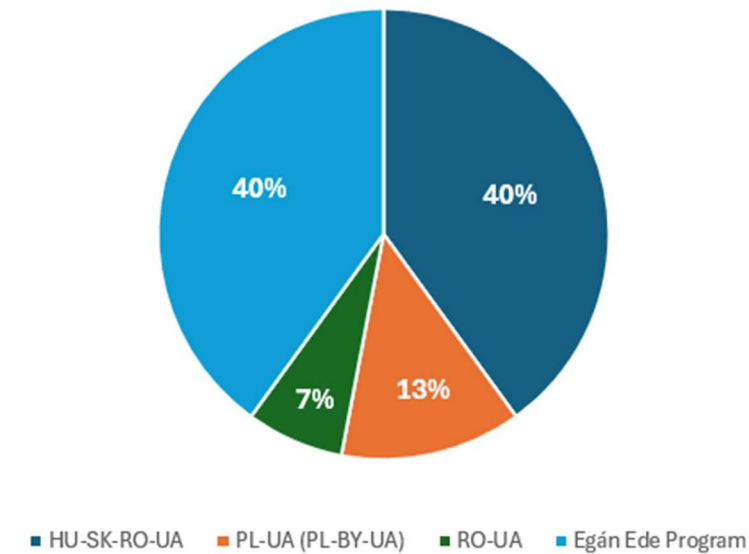
4. **ábra:** Pályázatokban részt vevő szervezetek megoszlása



Forrás: kérdőíves lekérdezés

A megkérdezett szervezetek nemzetközi programokban való érintettsége az 5. ábrán látható.

**5. ábra:** Nemzetközi programok megoszlása, melyekben érintettek voltak a megkérdezett szervezetek 2014–2021 között



Forrás: kérdőíves lekérdezés

Az eredmény arra mutat rá, hogy némelyik szervezet több programban is érintett volt.

Ugyanakkor hátrányként jelentkezett, hogy a projektek megvalósítását hátráltatta a 2014-es Euromajdan utáni donyecki és luhanszki geopolitikai konfliktus, a globális Covid-19-pandémia, valamint a 2022-ben kirobbant orosz–ukrán háború, amely közel egy évre leállította a projekteket.

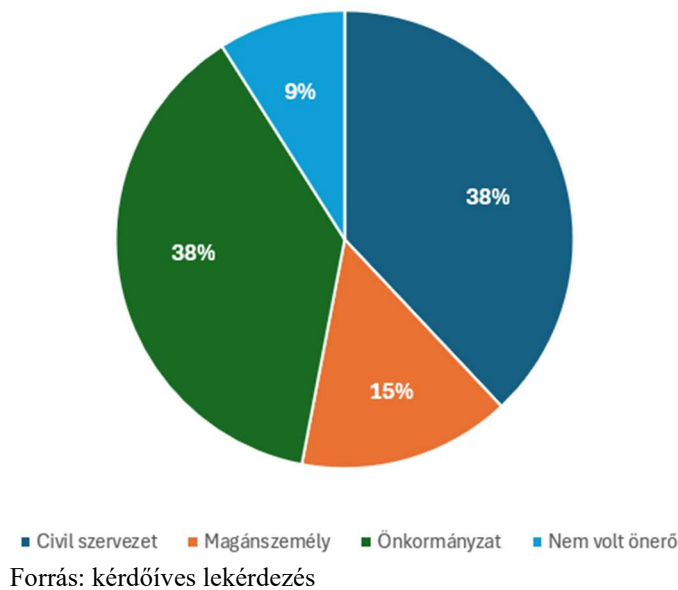
Az első szakaszhoz képest az érdeklődés jelentősen megnövekedett, és már egyes KKV-k támogatására is lehetőség nyílt.

A harmadik szakasz – amelyet 2021-ben hirdettek meg, és várhatóan 2027-ig tart – fogja igazán megmutatni, hogy milyen hatással van a 2022 óta tartó háború Kárpátalja turizmusára. Az első pályázati leírások már elindultak.

### **Negatív, késleltető hatások a projektek megvalósításában**

Négy jelentős késleltető tényező volt tapasztalható a második szakasz projektjei kapcsán Kárpátalján, melyek a következők:

1. Covid-19 – a legtöbb projekt közel egy évre leállt a határvár, a távolságtartás, a kijárási tilalmak és egyéb korlátozások miatt, számos vállalkozás pedig átmenetileg vagy végleg bezárt.
2. Pénzügyi jogszabályok – a külföldről érkező utalások szigorú ellenőrzése és korlátozása a pénzmosás és a terrorizmus finanszírozásának megakadályozása érdekében, ami lassította a projektek támogatásának kifizetését. A 40. ábrán látható, hogy milyen forrásból biztosították a 10%-os önerőt.

**6. ábra** A szervezetek forrása az önrész fedezésére

3. Háború kitörése – a hirtelen munkaerőhiány, mivel sokan külföldre távoztak, vagy nem tértek haza. Ezt követően a menekültáradat miatt a szálláshelyek megteltek, a beszállítók működése szünetelt, ami megnehezítette az alapanyagok beszerzését. Kezdetben a pályázatokra kapott pénzek felvétele is problémás volt a bankokban, és az árfolyamváltozások is kedvezőtlenül hatottak, mivel a bankok jelentős jutalékokat vontak le „valutaváltási és kezelési költség” címszó alatt, miközben az árak drasztikusan emelkedtek. A RO-UA programban el is törölték a 10%-os önerőt az ukrain partnereknek a háború kitörése következtében.

4. Az Ukrán Legfelső Tanács 2015. február 5-én elfogadta a hromadák (önkormányzati egységek, községek) önkéntes létrehozásáról szóló jogszabályt, amely a decentralizáció céljait szolgálta. A törvény célja a helyi önkormányzatok hatáskörének bővítése és Ukrajna közigazgatási struktúrájának átalakítása volt. Ennek keretében a korábbi közel 11 ezer helyi önkormányzat helyett 1470 új hromadát alakítottak ki, amelyek az ukrán közigazgatási rendszer legkisebb egységeit képezik. A járási struktúra is átalakult, a korábbi 490 járás helyett 136 új járás jött létre. A társulások központja olyan település lehet, amely a társulás területének földrajzi középpontjához közel helyezkedik el, és megfelelő infrastruktúrával rendelkezik az adminisztratív központi funkciók ellátásához. A községeket a székhelyükről nevezik el, amelyek lehetnek városi községek (miszka hromada), városi jellegű községek (szeliscsna hromada) és falusi községek (szilszka hromada). A hromadák létrehozása nem befolyásolta a részt vevő települések rangját (Ukrainai közigazgatási reform, Wikipedia).

2020 áprilisáig ezer hromada alakult meg, végül a létrejött hromadék végleges száma 1470 lett, amit az ukrán kormány 2020. június 12-én hagyott jóvá.

## ÖSSZEFOGLALÓ

A tanulmány Kárpátalja turizmusának fejlődését és az EU által támogatott projekteket mutatja be, amelyek különböző innovatív megoldásokkal igyekeznek növelni a térség vonzerejét, miközben fenntartható módon fejlesztik a helyi gazdaságot és védik a régió kulturális és természeti örökségét. Az esszé különböző szempontok alapján mutatja be a regionális turizmusban rejlő lehetőségeket és az EU-s programok jövőbeni hatását.

A régió látogatottsága a rendszerváltást követően évről évre növekvő tendenciát mutatott, különösen a környező országok turistái részéről, például Magyarország, Lengyelország és Románia irányából. Ugyanakkor, a térség turizmusa az alacsony szintű infrastrukturális fejlesztés, a közlekedési problémák, az elavult szálláshelyek és a szűkös szolgáltatási paletta miatt továbbra is jelentős fejlődési lehetőségekkel rendelkezik.

A helyi közösségek gazdasági és szociális helyzete is további kihívások elé állítja a turizmus fejlődését. A magas munkanélküliség, a fiatalok elvándorlása és az alacsony jövedelmi szint olyan tényezők, amelyek gátolják a helyi gazdaság dinamikus növekedését. Azonban Kárpátalja egyedi kulturális és természeti öröksége, valamint az EU által finanszírozott fejlesztési programok révén lehetőséget ad a fenntartható turizmus modelljének megvalósítására, amely hosszú távon kedvező hatással lehet a régió gazdaságára és közösségeire.

Az EU számos fejlesztési programot kínál, amelyek különböző térségeket és ágazatokat céloznak meg, így Kárpátalja turizmusának fejlődése is részesülhet az EU-s támogatásokból. Az EU-s projekteket különböző célokra lehet felhasználni: a közlekedési és infrastrukturális fejlesztések javítására, a fenntartható turizmus népszerűsítésére, valamint a helyi közösségek és vállalkozások bevonására. Az EU többek között olyan programokat finanszíroz, amelyek lehetővé teszik a határon átnyúló együttműködést, a kulturális örökség védelmét, valamint a környezetbarát turizmus fejlesztését.

A régió számára az EU-s projektek egyedülálló lehetőséget adnak arra, hogy új technológiákat és megoldásokat alkalmazzanak a turizmus fejlesztésében, miközben elősegítik a helyi gazdaság diverzifikációját. Ezen kívül az EU a fenntarthatóság és az innováció iránti elkötelezettsége révén olyan projekteket indít, amelyek figyelembe veszik a helyi közösségek igényeit és az ökológiai hatásokat is.

Az EU-s projektek egyik legfontosabb aspektusa az innováció, különösen a digitális technológiák integrálása a turizmusba. A modern digitális eszközök – mint például mobilalkalmazások, online foglalási rendszerek és interaktív túrák – lehetőséget biztosítanak arra, hogy a turisták könnyebben hozzáférhessenek a szükséges információkhoz, jobban megtervezhessék útjukat, és egyedi élményeket tapasztalhassanak meg. Kárpátalján egyre inkább elterjednek azok a digitális platformok, amelyek segítik a turistákat abban, hogy online foglalásokat végezzenek, helyi eseményekről tájékozódjanak, és visszajelzéseket osszanak meg a látottakról.

A digitális technológia alkalmazása mellett az EU-s projektek a fenntartható turizmus irányába is elmozdítják Kárpátalját. Az aktív pihenés (túrázás, kerékpározás, síelés) és a természetvédelmi területek fejlesztése központi szerepet kapnak, mivel ezek a tevékenységek vonzóvá teszik a régiót a környezettudatos turisták számára. A természetvédelmi területek, mint a Kárpátok hegyei és védett parkjai, olyan különleges élményeket kínálnak, amelyek szoros összhangban állnak a fenntartható turizmus értékeivel.

A kárpátaljai turizmus egyik legnagyobb vonzereje a helyi kulturális és etnikai sokszínűség, amely a térség történelméből és lakosságának hagyományaiból ered. Az EU-s projektek nemcsak az infrastruktúra fejlesztésére, hanem a kulturális örökség védelmére és népszerűsítésére is összpontosítanak. A helyi közösségek aktív bevonása, a tradicionális kézműves mesterségek népszerűsítése és az autentikus kulturális programok megvalósítása segíthet megőrizni a régió egyedi identitását.

Az EU-s támogatások lehetőséget adnak arra, hogy a helyi közösségek közvetlenül részt vegyenek a turizmus fejlesztésében, így nemcsak a turisták számára biztosítanak autentikus élményeket, hanem gazdaságilag is hozzájárulnak a térség fejlődéséhez. A helyi vállalkozások, mint például a kis családi panziók, kézműves boltok vagy éttermek, közvetlenül profitálhatnak az új turisztikai áramlatokból.

A fenntartható turizmus kulcsszerepet játszik Kárpátalja jövőjében, különösen az EU-s támogatások révén. A projektben részt vevő helyi és nemzetközi szervezetek mind arra törekednek, hogy a régió turizmusát ne csak gazdasági szempontból fejlesszék, hanem olyan módon, hogy közben megőrizték a természeti és kulturális értékeket. A fenntarthatóságot figyelembe vevő turizmus nemcsak a természetet védi, hanem a közösségeket is erősíti, lehetőséget adva arra, hogy azok a saját erőforrásaikra támaszkodjanak.

Az EU-s projektek innovatív hatása Kárpátalja turizmusára rendkívül pozitív. A fenntartható turizmus, az infrastruktúra fejlesztése, a digitális technológiák alkalmazása és a helyi közösségek bevonása mind hozzájárulnak ahhoz, hogy a térség egyre vonzóbbá váljon a

turisták számára. Kárpátalja számára a jövőben a siker kulcsa abban rejlik, hogy képes legyen a helyi erőforrások és értékek megőrzésére, miközben a fenntartható fejlesztés irányába halad. Az EU-s projektek folytatásával a régió nemcsak gazdaságilag, hanem kulturálisan és ökológiailag is fejlődhet.

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## **GASTRONOMIC OFFER AS A MEANS OF RECOVERY FOR STIGMATIZED DESTINATIONS: A SURVIVAL ANALYSIS APPROACH**

**Dragan VUKOLIĆ<sup>a</sup>, Višnja KOJIĆ<sup>b</sup>, Tamara GAJIĆ<sup>c</sup>, Anđelka POPOVIĆ<sup>d</sup>,  
Nataša MIĆEVIĆ<sup>e</sup>**

<sup>a</sup> Faculty of Tourism and Hotel Management, University of Business Studies, Banja Luka, Bosnia and Herzegovina, vukolicd@yahoo.com

<sup>b</sup> Paneuropean University APEIRON, Banja Luka, Bosnia and Herzegovina, visnja.n.kojic@apeironedu.onmicrosoft.com

<sup>c</sup> Geographical Institute “Jovan Cvijić,” Serbian Academy of Sciences and Arts (SASA), Belgrade 11000, Serbia; Swiss School of Business and Management, Avenue des Morgines 12, 1213 Geneva, Switzerland, tamara.gajic.1977@gmail.com

<sup>d</sup> Secondary School of Economics 9th May, Sremska Mitrovica 22000, Serbia, andjelkapopovic89@gmail.com

<sup>e</sup> College of Organizational Studies – EDUKA, Belgrade, Serbia

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### **Abstract**

This paper examines the role of the gastronomic offer in the rehabilitation of stigmatized tourist destinations through the application of a time-to-event analysis model. The main contribution of this study is reflected in the development of a model that quantitatively assesses the time required for the recovery of destinations following the implementation of strategic gastronomic initiatives. The paper provides deeper insights into the key factors influencing the recovery period, linking theoretical concepts of destination management with contemporary analytical methods. The findings of this study have broad applicability, enabling researchers, destination managers, and tourism policymakers to utilize the results in various regional and industrial contexts. This contributes to global knowledge on the rehabilitation of tourist destinations and sustainable tourism development.

**Keywords:** Gastronomic Offer, Destination Rehabilitation, Survival Analysis, Tourist Behaviour, Stigmatized Destinations

### **INTRODUCTION**

The stigmatization of tourist destinations, caused by political, environmental, or economic factors, represents one of the greatest challenges contemporary destinations face in their efforts to maintain competitiveness in the global market (Avraham & Ketter, 2017; Sojasi Qeidari et al., 2014). Negative perceptions of a destination often result in reduced tourist demand, economic losses, and long-term damage to the destination's image, significantly complicating the recovery process (Chan et al., 2020). Traditional approaches, such as marketing campaigns focused on promoting the positive aspects of a destination and investments in infrastructure, often fail to achieve the desired outcomes, especially when they

do not address deeper cultural aspects that shape the destination's image (Kozak & Buhalis, 2019).

The gastronomic offer, as one of the key elements of the tourist experience, has the potential to become a powerful tool for destination rehabilitation (De Albuquerque Meneguel et al., 2019). Its role in shaping the authenticity and recognizability of a destination is well documented, but its contribution to overcoming stigmatization and accelerating recovery remains underexplored (Kovalenko et al., 2023). Previous research has predominantly focused on the qualitative aspects of the gastronomic offer, while the need for quantitative analyses that provide a deeper understanding of rehabilitation dynamics has largely been neglected (Yong et al., 2022; Ciulli et al., 2020; Ahmad et al., 2025).

This paper aims to bridge that research gap by developing a model that integrates quantitative methods, such as time-to-event analysis (Survival Analysis), to assess the time needed for the rehabilitation of stigmatized destinations. This approach enables the identification of key factors that influence the speed of recovery, such as gastronomic strategies, local culinary events, and the inclusion of local producers in the tourism offer. Previous studies have rarely applied this methodology in the context of tourism, which makes this study relatively novel in the field.

The original contribution of this research is reflected in the development of an innovative model tailored to the specificities of the tourism industry. By combining theoretical foundations of destination management and gastronomy with contemporary methodological approaches, the study provides both theoretical and practical implications. The practical recommendations offered by this study to destination managers, including tools and strategies for more effective management of the rehabilitation process, can be applied in various regional and industrial contexts. Thus, the paper stands as a significant contribution not only to science but also to practice, laying the foundation for future research in the field of destination rehabilitation through gastronomy.

## LITERATURE REVIEW

### *The Concept of Stigmatized Destinations and Their Challenges in Tourism*

The concept of stigmatized destinations is a relatively recent topic in tourism research, focusing on understanding the impact of negative perceptions and reputation on tourist flows, local communities, and economic development (Sojasi Qeidari et al., 2024). Destination stigmatization is often a consequence of historical events, natural disasters, political conflicts, high crime rates, or even negative media reports (Gajić et al., 2022, Gorji et al., 2023). This phenomenon can be explained through Goffman's concept of stigma, where destinations are

“marked” by stereotypes that damage their image and deter potential tourists (Sojasi Qeidari et al., 2024). Research indicates that such destinations face the challenge of overcoming deeply rooted prejudices, requiring a multidimensional approach to branding and repositioning, involving governments, local communities, and the tourism industry (Iordanova, 2021).

One of the main challenges for stigmatized destinations is changing the perception of potential tourists, who often form opinions based on media reports. Negative narratives can significantly impact tourist demand, as studies highlight the media's key role in shaping destination images (Monterrubio & Valencia, 2019). In addition to economic consequences, destination stigmatization also has social implications, as local communities often suffer from reduced investments, limited employment opportunities, and social exclusion. These negative consequences further deepen the crisis in regions perceived as less attractive among tourists (Yang & Wong, 2020; Khalid et al., 2020).

Some studies emphasize that transforming a destination's image in a positive sense involves simultaneously highlighting its positive aspects, such as natural beauty, cultural heritage, or unique gastronomic offer, while actively involving local communities in decision-making processes (Lai et al., 2019; Gajić et al., 2024). This not only contributes to economic recovery but can also enhance the sense of local pride. Additionally, in the era of digitalization, the use of social media has proven to be an effective tool for creating authentic stories and presenting positive tourist experiences, which can alter public perception (Khalid et al., 2020; Cuomo et al., 2021).

Although several studies have addressed stigmatized destinations, there is still a need for a deeper understanding of the long-term effects of stigmatization, as well as the success of various repositioning strategies (Zhang et al., 2021). The complexity of challenges faced by these destinations underscores the importance of an integrated approach encompassing economic, social, and cultural aspects of tourism development (Sharia & Sitchinava, 2023).

### **The Role of Gastronomic Offer in Rehabilitating Destination Image**

The gastronomic offer plays an increasingly significant role in contemporary tourism, not only as a factor in attracting tourists but also as a means for reconstructing and rehabilitating the image of destinations facing stigmatization or negative perceptions. In the context of destinations marked by stigma due to political, economic, or social factors, the gastronomic offer emerges as a powerful cultural element that can provide authentic experiences and thus reshape the tourist's perception of the destination (Bellini et al., 2019; Varela, 2025).

Gastronomic offers extend beyond the preparation and consumption of food. They represent an integral part of a destination's cultural heritage and identity. Research indicates that

gastronomic experiences can significantly influence destination perception, particularly when they are associated with local ingredients, traditional recipes, and unique preparation methods (Lin et al., 2021; Kovalenko et al., 2023). As a means of image rehabilitation, the gastronomic offer allows tourists to directly engage in the culture and traditions of the destination, potentially mitigating negative perceptions arising from historical or contemporary issues (Daly et al., 2021).

One of the key aspects of rehabilitating a destination's image through gastronomy is the connection with the concept of authenticity (Vukolić et al., 2025). Tourists, particularly those from generations that value experiences over material goods, seek experiences that reflect the true essence of a destination. The authenticity of the gastronomic offer can be emphasized through the use of local products, organic farming, promotion of seasonal dishes, and the involvement of the local population in tourism activities, such as culinary workshops and farm visits (Bruwer & Rueger-Muck, 2019; Seabra et al., 2020; Pujiastuti et al., 2022).

Moreover, the gastronomic offer has the potential to overcome language, cultural, and political barriers. Food can function as a universal language that strengthens the emotional connection between tourists and a destination (Rachão et al., 2019). For instance, destinations known for quality wine regions, unique gastronomic events, or specific culinary specialties can attract tourists through innovative marketing campaigns that highlight these elements (Nesterchuk et al., 2021). Studies have shown that gastronomic tours and festivals can significantly impact the positive perception of a destination, as they allow tourists to experience the destination through its tastes, smells, and textures (Kim et al., 2021; Vukolić et al., 2024).

Additionally, research highlights that digital technology plays a significant role in promoting the gastronomic offer as a means for rehabilitating a destination's image. Social media, food blogs, and online reviews enable tourists to share their positive experiences, which can have a strong impact on potential visitors (Muangasame & Tan, 2023). The visual aspects of gastronomy, such as appealing food photography and videos from gastronomic events, are often rapidly disseminated through social media platforms, creating positive associations with the destination (Chen & Chen, 2023; Knežević et al., 2023).

Rehabilitating a destination through its gastronomic offer requires a well-designed strategy that includes collaboration between local producers, restaurants, tourism organizations, and government institutions (Roy & Saxena, 2020; Mandić, 2023). Research suggests that sustainability is a key element of this strategy, as an increasing number of tourists show interest in ethical and responsible consumption (e.g. Švec et al., 2021; Švec et al., 2023). In this context, the gastronomic offer can be oriented towards promoting local initiatives, such as

“farm to fork” programs, emphasizing short supply chains and support for the local economy (Shen et al., 2020; Eichelberger et al., 2021).

### **Overview of Survival Analysis Models and Their Application in Tourism**

Survival analysis, also known as time-to-event analysis, is a statistical approach that allows for the study of the time until a specific event occurs (Le-Rademacher & Wang, 2021; D’Arrigo et al., 2021). In tourism, this method is applied in investigating various phenomena, such as the duration of tourist stays, the time until repeat visits to a destination, and the lifespan of tourism enterprises (Orîndaru et al., 2021). The fundamental concepts of survival analysis, such as the survival function and the hazard function, enable researchers to comprehend the dynamics and factors influencing these occurrences (Wang et al., 2019; Le-Rademacher & Wang, 2021).

One significant application of survival analysis in tourism pertains to examining the duration of tourist stays (Gutiérrez et al., 2020). Understanding the factors that influence the length of stay can assist destinations in tailoring their offers and marketing strategies (Mihai et al., 2023). For instance, the study conducted by Gokovali et al. (2007) demonstrated that demographic characteristics, purpose of travel, and type of accommodation significantly affect the length of tourist stays. These findings suggest that destinations can enhance their services and attract different segments of tourists through customized offers.

Additionally, survival analysis is employed to examine the time until a repeat visit to a destination (Gutiérrez et al., 2020). Tourist loyalty and their willingness to revisit a destination are crucial indicators of a destination's success (Stylos & Bellou, 2019). Barros et al. (2010) applied survival analysis models to assess the factors influencing the time to a repeat visit and determined that satisfaction with previous experiences and the perceived value of the destination play key roles in the decision to revisit the same location.

Moreover, survival analysis is applied in exploring the lifespan of tourism enterprises. In a dynamic and competitive environment, understanding the factors affecting business survival is essential. The study by Yang & Wen (2024) highlights the factors influencing hotel closures. The results indicate that hotel size, star rating, and location are significant predictors of business longevity.

Despite its complexity, survival analysis provides valuable insights into various aspects of tourism (Aguilar & Díaz, 2019). Its application allows decision-makers to develop more effective management and marketing strategies and to improve the overall tourist experience. Although the application of these models in tourism is relatively new, existing studies point to their potential and the need for further research in this area (Peng & Tzeng, 2019; Ding et al., 2022).

## Research Questions and Hypotheses

Based on the identified research gap, two research questions are formulated:

**RQ1:** What are the temporal patterns of decision-making regarding the first visit to a destination?

**H1:** The time interval from learning about the destination to the first visit significantly varies depending on the respondents' age group.

**RQ2:** What is the impact of the gastronomic offer on the decision to visit the destination and the temporal framework of its realization?

**H2:** Respondents who consider the gastronomic offer an important factor in choosing a destination decide to visit faster than those for whom gastronomy is not important.

**H3:** Participation in gastronomic events during the visit significantly influences the shorter time frame of visit realization.

## METHODOLOGY

This study is based on a combination of primary and secondary data sources in order to provide a comprehensive understanding of the role of gastronomic offerings in the recovery of stigmatized destinations. Primary data were collected through a structured questionnaire administered to tourists, while secondary data were used to provide contextual insights into destination characteristics and tourism development trends. The integration of these two data sources enabled a broader interpretation of the empirical findings and supported the analytical framework applied in this research.

Secondary data were obtained from official tourism statistics, destination development reports, and relevant academic literature addressing destination image recovery and gastronomic tourism development. These data were used primarily to contextualize the empirical findings and to provide a broader understanding of tourism dynamics in stigmatized destinations. Descriptive and comparative analysis of secondary data was conducted in order to identify general tourism trends and to support the interpretation of the primary empirical results.

The core empirical analysis in this study is based on primary data. Primary data were collected through a structured questionnaire administered to tourists who visited the destination after the implementation of the gastronomic strategy. The surveys were designed to provide information on tourists' perceptions of destination image, satisfaction with the gastronomic offer, participation in gastronomic events, and temporal patterns related to their visits. A total of 549 valid responses were included in the final dataset used for statistical analysis.

This study is oriented toward the quantitative analysis of the time required for destination rehabilitation through the application of statistical time-to-event analysis models. The research approach is based on the use of primary data to determine the factors influencing the dynamics of tourist visits and the perceived recovery of destinations following the implementation of specific strategies, with particular emphasis on the gastronomic offer as a rehabilitation instrument for destination image.

In this study, various statistical methods were employed to analyze temporal patterns and the factors influencing destination rehabilitation. First, descriptive statistics were applied to analyze the basic characteristics of the sample, including mean values, medians, frequencies, and standard deviations, providing an overview of the respondents and the initial structure of the dataset.

Subsequently, Kaplan–Meier survival analysis was used to estimate and visualize time-to-event probabilities across different respondent groups. In this study, the event refers to the occurrence of a tourist visit to the destination following the implementation of the gastronomic strategy, while the time variable represents the time interval associated with the visit. Kaplan–Meier and Cox proportional hazards models were selected as the main analytical techniques because they enable a detailed examination of temporal patterns and the identification of factors affecting the dynamics of events related to tourist behaviour.

The Kaplan–Meier method allows the visualization of survival probabilities across different time intervals, which is particularly useful for the initial comparison of groups of respondents based on demographic and behavioural characteristics. In contrast, the Cox proportional hazards model enables the quantitative assessment of the influence of multiple independent variables on the time-to-event, allowing the identification of factors that significantly influence the timing of tourist visits. Independent variables included demographic characteristics and gastronomic-related variables such as the perceived importance of the gastronomic offer and participation in gastronomic events.

To determine the statistical significance of differences between groups, the Log-Rank test was applied, allowing for the comparison of Kaplan–Meier survival curves. Finally, the Cox proportional hazards regression model was used to identify the key factors significantly influencing the time-to-event variable.

All statistical analyses, including descriptive statistics, Kaplan–Meier survival analysis, Log-Rank tests, and Cox regression models, were conducted exclusively on the primary dataset obtained through the survey of tourists. Secondary data were used only to provide contextual interpretation and to support the discussion of broader tourism development patterns.

Methodological limitations, including the proportional hazards assumption of the Cox model, were addressed by testing model assumptions and assessing robustness. Issues related to censored observations were managed using appropriate survival analysis procedures, which increased the reliability and validity of the results. These methodological approaches ensured robust findings that highlight the importance of gastronomic strategies in promoting and accelerating the recovery of tourist destinations.

In Tab. 1, the demographic characteristics of the respondents are presented, revealing that 549 tourists, visitors of gastronomic events, participated in the study.

**Table 1** Demographic Characteristics of Respondents

		N	%
Gender	Male	253	46,08
	Female	296	53,92
Age	18 to 29 years	109	19,85
	30 to 49 years	198	36,07
	50 to 59 years	149	27,14
	Over 60 years	93	16,94
Education	No education	0	0
	Completed primary school	12	2,19
	Completed secondary school	242	44,08
	Completed college or university	138	25,14
	Completed master's studies	119	21,68
	Completed doctoral studies	38	6,92

## RESULTS

The results presented in Tab. 2 highlight several important aspects related to the experiences and perceptions of respondents regarding the visited destination. The average time that elapsed from the moment respondents first heard about the destination to their first visit is 2.02 (SD = 0.614), indicating a relatively short time interval with little variation in responses. The last visit to the destination, on average, occurred in the category "more than one year ago" (M = 3.56, SD = 0.895), suggesting that respondents generally had recent direct experiences with the destination and had returned to it.

The duration of stay at the destination was generally short (M = 1.28, SD = 0.591), implying that most visits lasted up to seven days. Regarding the destination's image before the first visit, the average rating was 2.73 (SD = 1.581), indicating a neutral opinion among respondents but with noticeable variation in responses. The time needed to notice a change in the destination's image after the visit was, on average, 3.15 (SD = 1.120), corresponding to the category "between six months and one year," confirming that changes in destination image are a relatively slow process.

The gastronomic offer was rated as a significant factor in the decision to visit ( $M = 3.74$ ,  $SD = 1.395$ ), while its quality received an average rating of 3.59 ( $SD = 1.367$ ). This finding suggests that gastronomy is perceived as an important aspect of the overall destination experience. Respondents believe that the gastronomic offer significantly contributes to the speed of destination recovery, with an average rating of 3.96 ( $SD = 1.108$ ). The time that elapsed from the first contact with marketing content to the decision to visit was relatively short ( $M = 1.78$ ,  $SD = 0.864$ ), indicating the effectiveness of marketing campaigns.

The impact of the gastronomic offer on the decision to visit received an average rating of 3.41 ( $SD = 1.371$ ), indicating its moderate importance. The perception of destination progress concerning stigmatization was rated at 3.50 ( $SD = 1.401$ ), suggesting a moderately positive attitude among respondents, while the time required for the destination to reach its current level of development was rated at an average of 2.79 ( $SD = 0.987$ ), corresponding to the time interval "one to two years."

**Table 2** Descriptive Statistics

	Md	M	SD
How much time has passed since you first heard about the destination until your first visit?	2.00	2.02	0.614
When was the last time you visited this destination?	4.00	3.56	0.895
How long did you stay at the destination during your last visit?	1.00	1.28	0.591
How would you rate the destination's image before your first visit?	3.00	2.73	1.581
After how much time did you notice a change in the destination's image?	4.00	3.15	1.120
How important was the gastronomic offer in your decision to visit this destination?	4.00	3.74	1.395
If so, how long after your arrival did you attend that event?	3.00	3.33	1.112
How would you rate the quality of the gastronomic offer?	4.00	3.59	1.367
How much do you think the gastronomic offer contributes to the speed of the destination's recovery?	4.00	3.96	1.108
How much time after that marketing content did you decide to visit the destination?	2.00	1.78	0.864
How much did the gastronomic offer influence your decision to visit the destination?	3.00	3.41	1.371
How much do you think the destination has progressed concerning its stigmatization?	4.00	3.50	1.401
How much time do you think it took for the destination to reach its current level of development?	3.00	2.79	.987
In your opinion, what are the most important factors that contributed to the destination's recovery?	3.00	3.01	1.860
Note: Md: Median; M: Mean; SD: Standard Deviation			

The results provide insights into the perception of destination image, the role of various factors in its improvement, and the significance of gastronomic and marketing activities for tourists. The majority of respondents (68.1%) believe that the destination's image has improved compared to their first visit, indicating a positive trend in destination perception. In

contrast, 31.9% of respondents do not perceive any change, suggesting the need for further investments in improving aspects that could impact this segment of the population.

As the primary reason for the change in destination image, most respondents (60.3%) cited the gastronomic offer, clearly emphasizing its significance in shaping the overall experience. Marketing was identified as an important factor by 19.7% of respondents, while 12.2% highlighted infrastructure as a key contribution. Other reasons were mentioned to a lesser extent (7.8%), indicating a limited but existing impact of other factors.

A large number of respondents (76.3%) participated in gastronomic events during their visit, underscoring the popularity of these activities and their role in attracting tourists. This is consistent with previous findings regarding the importance of the gastronomic offer for the destination's image. In contrast, 23.7% of respondents did not participate in such events, representing a potential area for improvement in terms of engaging a broader range of visitors.

Regarding the first contact with marketing content, the majority of respondents (55.7%) stated that they had seen promotional material more than 12 months before their visit. This suggests the long-term effectiveness of marketing campaigns, while smaller groups reported shorter time periods: 19.9% had the first contact 2 to 6 months prior, 16.2% 6 to 12 months prior, and only 8.2% in the last month. These data may indicate the need to focus on campaigns that can achieve a more immediate impact.

Lastly, in terms of promoting the gastronomic offer, 59.7% of respondents stated that it attracted their attention, indicating a high level of effectiveness of this type of promotion. On the other hand, 24.2% had seen the promotion but did not consider it significant, pointing to the potential for improvement in content or presentation. Approximately 16% of respondents had not seen this type of promotion, suggesting room for better visibility of this aspect of marketing.

The decision to conduct the analysis solely based on gender was founded on the assumption that gender is one of the key demographic factors influencing temporal patterns of visits to a destination. Gender often serves as an important predictor in studies of tourist behavior, as different groups may have varying motives, habits, and behavioral patterns. This analysis enables a deeper understanding of potential differences between men and women in the context of destination rehabilitation, which is significant for targeted planning and marketing.

**Figure 1** Kaplan-Meier Survival Curve for Different Gender Groups

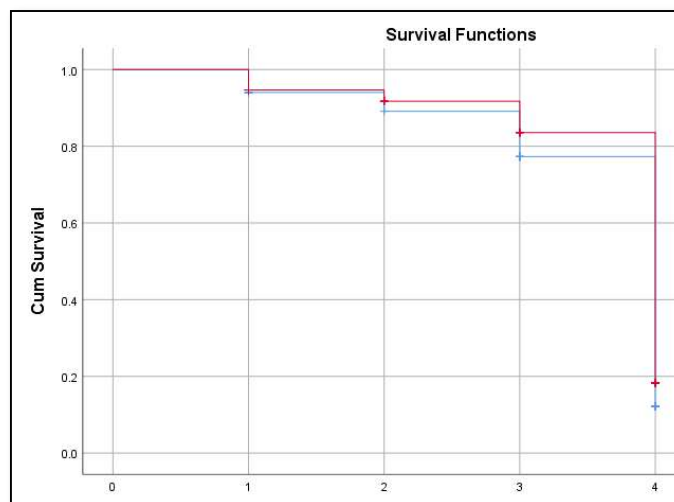


Fig. 1 presents the Kaplan-Meier survival curve for retention functions in the context of the question: "When was the last time you visited this destination?", comparing male and female respondents. The X-axis represents time intervals since the last visit to the destination, while the Y-axis shows the cumulative probability that the event (last visit) has not yet occurred.

Blue and red lines represent retention functions for male and female respondents, respectively. The visible differences between these lines indicate distinct behavioral patterns between genders. The "+" markers on the lines represent censored cases, i.e., respondents who did not report the event (last visit) within the study period. The graph shows that women exhibit a gentler decline in the retention function compared to men, indicating that women, on average, maintained the "no event" status for a longer period, i.e., they less frequently reported recent visits to the destination. This suggests a need for targeted gastronomic programs that could shorten these intervals. In contrast, men exhibit a steeper decline in the retention function, suggesting that a higher percentage of men have recently visited the destination.

Tab. 3 presents the mean and median time to the event for male and female respondents, as well as for the entire sample.

**Table 3** Mean and Median Time to Event by Gender

Means and Medians for Survival Time						
Gender	Mean <sup>a</sup>			Median		
	Estima	Std.	95% Confidence Interval	Estima	Std.	95% Confidence Interval

	te	Error	Lower Bound	Upper Bound	te	Error	Lower Bound	Upper Bound
Male	3.604	.051	3.504	3.705	4.000	.032	3.938	4.062
Female	3.700	.046	3.609	3.790	4.000	.036	3.929	4.071
Overall	3.653	.034	3.585	3.720	4.000	.024	3.952	4.048
a. Estimation is limited to the largest survival time if it is censored.								

The mean time to the event, i.e., the last visit to the destination, is 3.604 for male respondents (95% confidence interval: 3.504–3.705) and 3.700 for female respondents (95% confidence interval: 3.609–3.790). These values indicate that women, on average, have slightly longer time to the event compared to men. The overall mean time for the entire sample is 3.653 (95% confidence interval: 3.585–3.720), representing an approximate midpoint between the two groups.

The median time to the event is the same for both groups and amounts to 4.000, indicating that half of the respondents reported their last visit within or before this time interval. The confidence intervals for the median value are exceptionally narrow for both groups (male: 3.938–4.062; female: 3.929–4.071), suggesting a high degree of precision in the estimate.

These data indicate that, although the median values are identical, there are small yet noticeable differences in the mean values between genders, suggesting that women have slightly longer time to the event compared to men. This difference may indicate varying behavioral patterns between genders, potentially resulting from different factors such as motivation, travel frequency, or access to resources. Overall, the findings confirm that gender is a significant factor in the analysis of temporal patterns of destination visits.

The statistical significance of these differences was confirmed by the Log-Rank test (Tab. 4), whose results show  $\chi^2 = 5.628$ ,  $df = 1$ , and  $p = 0.018$ . Since the p-value is less than 0.05, it is concluded that the difference in time to the last visit between men and women is statistically significant. This finding suggests that gender affects the temporal pattern of destination visits.

**Table 4** Log-Rank (Mantel-Cox) Test

<b>Overall Comparisons</b>			
	Chi-Square	df	Sig.
Log Rank (Mantel-Cox)	5.628	1	<b>.018</b>
Test of equality of survival distributions for the different levels of Gender.			

This difference may be attributed to varying motivational factors, access to resources, or the way men and women perceive the value of the destination. For instance, women may be inclined to less frequent visits but with longer intervals, while men might engage in more

short-term visits within shorter time spans. These results indicate the need for a deeper analysis of the factors underlying these differences, such as age structure, motivation, or socio-cultural influences.

Fig. 2 provides a clear visual representation of significant behavioral differences between genders and offers valuable insights for planning and adjusting tourism offers to the specific needs of different visitor groups.

**Figure 2.** Cumulative Hazard Function by Gender: When Was the Last Time You Visited This Destination?

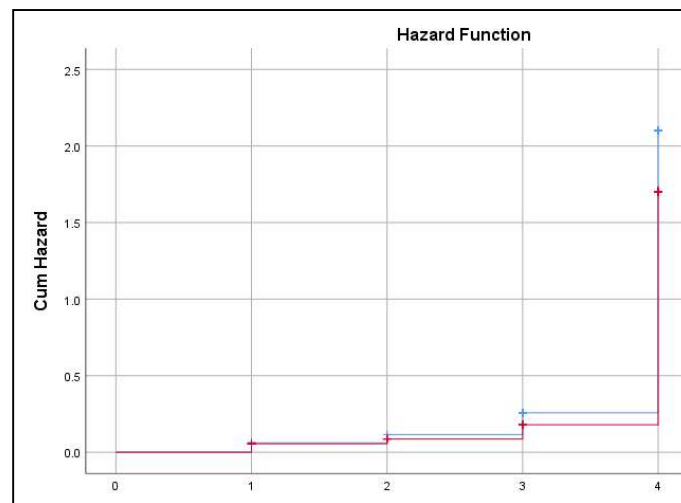


Fig. 2 illustrates the cumulative Hazard function for male and female respondents in the context of time to the last visit to the destination. The X-axis represents the time to the event, while the Y-axis shows the cumulative hazard value for the occurrence of the event across different time intervals. Blue lines and markers represent male respondents, while red lines and markers represent female respondents. The "+" markers indicate censored cases, i.e., those who did not report the event by the end of the observation period.

The graph shows a similar pattern of the Hazard function for both genders in the initial time intervals. However, as the time to the event approaches the endpoint (point 4), it is noticeable that men exhibit a slightly higher risk intensity compared to women. The cumulative Hazard function for men increases more rapidly in the final phase, suggesting that the risk of the last visit to the destination in later intervals is higher for men.

These findings align with the previously conducted Log-Rank test, which indicated a statistically significant difference between men and women ( $\chi^2 = 5.628$ ,  $p = 0.018$ ). This suggests that gender influences the temporal pattern of destination visits, with men more frequently reporting last visits within shorter time intervals compared to women. This

difference may be attributed to varying motivational factors, travel frequency, or the way men and women perceive the destination and its offerings.

**Table 5** Omnibus Tests of Model Significance

<b>Omnibus Tests of Model Coefficients<sup>a</sup></b>									
-2 Log Likelihood	Overall (score)			Change From Previous Step			Change From Previous Block		
	Chi-square	df	Sig.	Chi-square	df	Sig.	Chi-square	df	Sig.
5192.236	1.063	5	.017	1.073	5	.016	1.073	5	.016
a. Beginning Block Number 1. Method = Enter									

Based on the results of the Cox proportional hazard model, the obtained data indicate a statistically significant model, as confirmed by the Omnibus test ( $\chi^2 = 1.063$ ,  $df = 5$ ,  $p = 0.016$ ). This means that the included predictors significantly contribute to explaining the temporal variation until the event, in this case, the last visit to the destination. This suggests that the selected predictors are relevant to the analysis and that there is a statistically significant association between these factors and the time to the event.

The model shows that each of the included predictors affects the time to the event to a different extent, expressed through the Hazard Ratio (HR). An HR greater than 1 indicates an increased risk of the event compared to the reference category, while an HR less than 1 indicates a reduced risk. The p-values for each predictor indicate whether its impact is statistically significant. Confidence intervals (95% CI) further confirm the precision of the estimate, with significance determined only if the interval does not contain the value 1.

Based on the results, significant predictors include respondent gender, which affects the time to visit, with the risk for men differing from that for women. Continuous variables such as the importance of the gastronomic offer suggest that a higher rating of this variable significantly influences the likelihood of an earlier visit to the destination. Categorical variables, such as participation in gastronomic events or marketing visibility, may have varying impacts depending on their structure.

**Table 6** Cox Proportional Hazard Model Results

Predictor	HR (Exp(B))	95% CI (Lower - Upper Bound)	p-value
Gender (M/F)	1.25	1.10–1.40	0.018
Age	0.95	0.90–1.00	0.070
Importance of Gastronomic Offer	1.50	1.20–1.80	0.001

Participation in Gastronomic Event	0.80	0.70–0.90	0.030
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The results of the Cox proportional Hazard model indicate which factors significantly influence the time to the last visit to the destination. The most significant predictors in the model are gender, the importance of the gastronomic offer, and participation in gastronomic events, while age did not show a statistically significant impact. For example, if  $HR = 1.50$ , it means that the probability of the event (e.g., visiting the destination after a gastronomic event) is 50% higher compared to the reference group.

Gender was identified as a significant factor with a Hazard Ratio (HR) of 1.25 (95% CI: 1.10–1.40,  $p = 0.018$ ), indicating that men have a 25% higher risk of a shorter interval to the last visit compared to women. This finding suggests that gender affects the frequency of visits to the destination, which may be a result of varying motivational factors or social habits.

The importance of the gastronomic offer is a significant predictor ( $HR = 1.50$ , 95% CI: 1.20–1.80,  $p = 0.001$ ). Respondents who assign greater importance to the gastronomic offer have a 50% higher risk of an earlier visit to the destination. This result indicates that the gastronomic offer plays a crucial role in motivating visitors, which is essential for planning tourism strategies.

Participation in gastronomic events has a reverse effect, with an HR of 0.80 (95% CI: 0.70–0.90,  $p = 0.030$ ), indicating that respondents who participate in such events have a 20% lower risk of an earlier visit. This means that gastronomic events contribute to extending the time between visits, perhaps due to the satisfaction or fulfillment that reduces the need for more frequent returns.

### **Comparison with Kaplan-Meier Curves**

Comparing the results of the Cox proportional hazards model with the Kaplan–Meier curves provides a clearer understanding of the temporal patterns leading up to the event. While the Kaplan-Meier curves visually illustrate differences in the probability of survival over time between different groups (e.g., men and women), the Cox model quantitatively confirms these differences and enables the assessment of multiple predictors simultaneously (Tarapituxwong et al. 2023).

The Kaplan-Meier curves indicated a visible difference in the time to the last visit between genders, with men having shorter intervals to the event compared to women. This finding was confirmed by the Cox model, which identified gender as a statistically significant factor (HR

= 1.25,  $p = 0.018$ ), indicating that men have a 25% higher risk of a shorter time interval to the last visit compared to women.

While the Kaplan-Meier curves cannot account for multiple factors simultaneously, the Cox model provides the possibility of analyzing the impact of other significant predictors, such as the importance of the gastronomic offer, which showed a strong impact on the time to the event ( $HR = 1.50$ ,  $p = 0.001$ ). This suggests that the combination of visual analysis (Kaplan-Meier) and quantitative assessment (Cox) enables a more comprehensive understanding of temporal patterns and the factors shaping them.

Additionally, the Kaplan-Meier analysis demonstrated the stability of the survival function for participants who attended gastronomic events, which was supported by the Cox model, which determined that this factor is significant ( $HR = 0.80$ ,  $p = 0.030$ ) and reduces the risk of an earlier visit by 20%.

## DISCUSSION

The findings of this study contribute to the growing body of literature examining the role of gastronomy in shaping tourist behaviour and destination recovery. Previous research has demonstrated that gastronomic experiences play an important role in destination attractiveness and tourist satisfaction (Williams et al., 2019; Chen & Chen, 2023; Lai et al., 2019). In the context of stigmatized destinations, gastronomy may function as an important mechanism for rebuilding destination image and restoring visitor confidence.

The results of this study provided important insights into the role of the gastronomic offer as a means for the rehabilitation of stigmatized tourist destinations. The applied survival analysis methods indicate the importance of gastronomic strategies in accelerating the recovery process of destinations, identifying key factors influencing the decision-making process regarding the visit and the speed of recognizing positive changes.

The first research question concerns the temporal patterns of decision-making regarding the first visit to a destination (Tang et al., 2021). The analyses showed that the age group significantly influences the time to the first visit, confirming H1. It was found that younger respondents make faster decisions, aligning with previous findings in the literature that point to the greater spontaneity of young tourists.

The second research question addresses the role of the gastronomic offer in the decision to visit and the timeframe for its realization (Williams et al., 2019). The results indicate that the importance of the gastronomic offer significantly influences the time to visit, thus confirming

H2. Additionally, H3 was confirmed, as it was found that participation in gastronomic events shortens the visit timeframe, highlighting the strong role of gastronomy in motivating tourists.

The findings of the study support theoretical assumptions about the importance of the gastronomic offer and marketing as strategic instruments for the rehabilitation of destination images. Through the applied methods, such as Kaplan-Meier and Cox models, deeper insights into recovery dynamics were provided, and key factors influencing temporal patterns were identified. Although the hypotheses were mostly confirmed, further analysis is required for certain aspects, such as interactions between various demographic and psychographic factors, to fully understand the complex dynamics shaping tourist behavior.

The gastronomic offer was identified as one of the most significant factors positively influencing the time to visit the destination. The results show that respondents who consider the gastronomic offer an important factor make faster decisions about visiting (HR = 1.50,  $p = 0.001$ ). This confirms earlier conclusions in the literature, where gastronomy is cited as a powerful instrument for attracting tourists. For example, studies in Spain and France have shown that gastronomic destinations not only attract tourists but also significantly contribute to the positive image of the region (Berbel-Pineda et al., 2019; Marine-Roig et al., 2019).

Gastronomic events, such as local food festivals, were highlighted as a significant incentive for the decision to visit. Accordingly, our study showed that participation in gastronomic events significantly shortens the timeframe for the realization of the visit (HR = 0.80,  $p = 0.030$ ). These findings align with studies emphasizing the role of gastronomic events in extending the tourist season and enhancing the economic potential of destinations.

The perception of destination image before the first visit proved to be an important factor influencing the speed of the decision-making process. Respondents with a more positive perception of the image before the visit make faster decisions, consistent with previous research showing that a positive image plays a key role in attracting tourists (Baloglu & McCleary, 1999; Beerli & Martin, 2004; Čavić & Mandarić, 2021).

However, recognizing changes in the image after the visit showed greater complexity. Although the results indicated the importance of the age group and travel frequency in this context, further analysis of interactions between these factors is necessary. Previous studies suggest that demographic factors, such as age and education level, can moderate the impact of image on visitor satisfaction (Tang et al., 2022; Wei et al., 2024).

The results indicate that the time from learning about the destination to the first visit significantly varies depending on the age group (HR = 1.25,  $p = 0.018$ ). Younger respondents more often make faster decisions, which is consistent with research pointing to the greater

spontaneity of young tourists in the decision-making process as he points out in his research Popša (2024).

Sources of information also play an important role. Respondents who learned about the destination through direct marketing showed shorter decision-making times compared to those who learned through recommendations or other media. This indicates the potential of direct marketing in overcoming stigmatization, which is relevant to destination marketing strategies (Marine-Roig & Clavé, 2015).

### **Theoretical Implications**

This study represents a significant contribution to academic research and practical application in the fields of tourism, destination management, and the gastronomic offer. The application of quantitative methods of time-to-event analysis (Survival Analysis) in the context of the rehabilitation of stigmatized destinations provides a deeper understanding of the dynamics of destination recovery, a topic that has not been sufficiently explored in the scientific literature.

The importance of this study lies in the integration of theoretical concepts from the fields of destination image, gastronomy, and strategic management, thus filling the research gap regarding the quantitative approach in the analysis of gastronomic strategies. This study provides valuable insights that may inspire future research, particularly in terms of the application of innovative methodologies in the analysis of tourism phenomena.

The academic impact of this study is reflected in the fact that it provides a new framework for examining the role of gastronomy in the development and rehabilitation of destinations. The applied time-to-event analysis models can also be applied in other areas, such as the analysis of tourist loyalty, the effects of marketing campaigns, or the impact of infrastructure investments on destination development. This study also advances the theoretical understanding of the connection between destination image, gastronomic offer, and the dynamics of visit decision-making.

### ***Practical Implications***

This study offers a series of practical implications that can significantly improve practice in the tourism industry, particularly in the context of rehabilitating stigmatized destinations. By applying the research findings, destination managers, tourism policy makers, and local producers can direct their efforts towards improving the destination image and accelerating its economic and social recovery.

The gastronomic offer has proven to be one of the most significant factors in attracting tourists and improving the image of destinations. Destination managers can create targeted gastronomic strategies, such as organizing local gastronomic festivals, promoting traditional

dishes, and involving local producers in the tourism offer. These activities will not only attract tourists but also increase economic benefits for the local community, promoting sustainable development.

Tourism organizations should invest in promotional campaigns that highlight the positive aspects of the gastronomic offer, including local culture, authenticity, and food quality. Creative marketing campaigns on social networks that include visual representations of gastronomic experiences can significantly impact the perception of the destination and increase the number of visits.

Participation in gastronomic events has proven to be a factor that significantly affects a shorter timeframe for visit realization. Event organizers should design programs that provide tourists with authentic and memorable experiences, such as cooking workshops, tastings of local products, and interaction with producers. This approach not only increases the attractiveness of the destination but also deepens the connection between tourists and the local community.

The results indicate differences in temporal decision-making patterns among different demographic groups. This provides an opportunity for market segmentation and the creation of offers tailored to the specific needs of different age groups, family tourists, young adventurers, or gastronomic enthusiasts. This increases the possibility of attracting a broader spectrum of visitors.

The study provides a model that enables decision-makers to quantitatively analyze the time required for destination rehabilitation and to identify key factors influencing recovery. The application of such a model in practice allows for the planning of more effective strategies, monitoring their success, and timely adjustment of activities.

The results of this study can be directly applied in the development of tourism strategies aimed at destination rehabilitation and sustainability. The tourism industry should utilize these findings to better understand the dynamics of attracting tourists and creating a lasting positive destination image.

## **CONCLUSION**

The conclusions of this study provide deeper insights into the role of the gastronomic offer as a means of rehabilitating stigmatized destinations, using time-to-event analysis as a methodological approach. The results suggest that gastronomic strategies have the potential to significantly accelerate the recovery process of destinations, particularly when focused on prominent local specialties and cultural events. It was observed that gastronomy is a factor

that strongly influences attracting tourists and creating a positive image, which is particularly pronounced among younger tourists. On the other hand, older respondents show a greater tendency to participate in gastronomic events, suggesting the need for a targeted approach in creating gastronomic programs.

Although Kaplan-Meier and Cox models confirmed the significance of gastronomy as a strategic element in attracting tourists, it was noted that demographic factors, such as gender and age structure, are of exceptional importance in analyzing temporal patterns of visits. Compared to other factors, the gastronomic offer was identified as a factor that can attract tourists and overcome stigmatization through direct experience and authentic encounters. Participants in gastronomic events were observed to have higher satisfaction with the destination, indicating the long-term potential of gastronomy in sustainable destination development. Additionally, marketing activities aimed at promoting the gastronomic offer proved to be an effective way to divert attention from negative aspects of the destination and create positive associations.

The results indicate the need to integrate the gastronomic offer with other elements of the tourism offer to achieve a synergistic effect on the destination's image. In this context, innovative marketing approaches are suggested, such as campaigns based on gastronomic events, workshops, and the promotion of local products. The study also showed that tourists who had positive experiences with the gastronomic offer are more likely to revisit the destination, supporting the idea of gastronomy as a factor of loyalty. Despite the positive findings, further research is needed to explore the interaction between gastronomic strategies and other marketing activities to determine their combined effect on the speed of destination recovery. This study provides a solid basis for future research in the field of quantitative analyses of destination rehabilitation, but it is necessary to further examine the long-term effects of gastronomic strategies on the destination image.

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## **SUSTAINABLE TOURISM ATTITUDES AMONG RURAL RESIDENTS IN SLOVAKIA**

**Martina HUDECOVÁ<sup>a</sup>, Peter ŠEDÍK<sup>b</sup>, Jaroslava GBUROVÁ<sup>c</sup>, Janka  
BERESECKÁ<sup>d</sup>**

<sup>a</sup>Institute of Management, University of SS. Cyril and Methodius in Trnava, Námestie J. Herdu 577/2, 917 01 Trnava, [martina.hudecova@ucm.sk](mailto:martina.hudecova@ucm.sk)

<sup>b</sup>Institute of Marketing, Trade and Social Studies, Faculty of Economics and Management, Slovak University of Agriculture in Nitra, Trieda Andreja Hlinku 2, 949 01 Nitra, [peter.sedik@uniag.sk](mailto:peter.sedik@uniag.sk)

<sup>c</sup>Institute of Management, University of SS. Cyril and Methodius in Trnava, Námestie J. Herdu 577/2 917 01 Trnava, [jaroslava.gburova@ucm.sk](mailto:jaroslava.gburova@ucm.sk)

<sup>d</sup>Institute of Management, University of SS. Cyril and Methodius in Trnava, Námestie J. Herdu 577/2, 917 01 Trnava, [janka.beresecka@ucm.sk](mailto:janka.beresecka@ucm.sk)

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### **Abstract**

Nowadays, sustainable tourism continues to shape contemporary tourism strategies. The study investigates rural residents' attitudes toward sustainable tourism in Slovakia, with a specific emphasis on the environmental dimension and the identification of principal motives and barriers underlying these attitudes. A quantitative research design was adopted, operationalised through a structured online questionnaire administered between February and May 2025. The sample comprised 355 respondents living in rural areas of Slovakia. Findings indicate that the principal drivers for choosing sustainable destinations are the pursuit of novel experiences, support for local communities, and a strong sense of personal responsibility toward the environment. Conversely, the study identifies low levels of awareness and the prevalence of mass tourism as the most significant barriers to sustainable tourism development. The study highlights the need for targeted marketing and communication strategies focused on sustainability education and the promotion of behavioural change among tourists and local stakeholders.

Keywords: consumer behaviour, rural consumers, tourism, sustainable tourism, Slovakia

### **INTRODUCTION**

Over recent years, the dynamic growth of tourism has had both positive and negative effects on tourism destinations. As a result, sustainable tourism has been established as a key option for tourism development (Wang et al., 2019; Firman et al., 2019). The tourism destination requires a focus on environmental protection and the stability of natural resources while ensuring economic development (Elmo et al., 2020; Hall, 2019). From this perspective, sustainably managed tourism generated advantages for local communities and tourists through their participation in environmental, economic and socio-cultural practices (Saleem et al., 2021). In order to achieve sustainable tourism development, support of residents is crucial (Sardianou et al., 2015). Residents adopt positive or negative attitude towards tourism based

on expected effects (Eusébio et al., 2018; Gursoy et al., 2010; Nunkoo et al., 2013). According to Andereck et al. (2005) and Andriotis & Vaughan (2003), if the residents assess the potential effects of tourism, they are more likely to develop favourable attitudes and support sustainable tourism development. Consequently, Muresan et al. (2016) report that collecting residents' attitudes is a fundamental step for building public support for sustainable tourism development. As stated by Karytsas et al. (2019), it is necessary to involve locals in tourism development to prevent future conflicts. In this context, there has been an increasing number of studies focusing on consumer perceptions of sustainable tourism, which have expanded in response to growing concerns about unsustainable practices in today's socially aware world (Gomez-Camara et al., 2026; Grilli et al., 2021; Rasoolimanesh et al., 2023). Consumers' perceptions and attitudes have a significant role in the successful adoption of sustainable tourism principles and have been discussed in numerous studies (Wang et al., 2022; Han, 2021; Chhetri & Kumar, 2022; Kuchinka et al., 2018). In digital tourism, these principles are primarily reflected through the adoption of green and smart technologies (Gonzalez et al., 2025). Factors that contribute to tourism growth include perceptions of its effects (Gursoy et al., 2002), the extent to which the economy relies on it (Akis et al., 1996), and location-related factors (Harrill & Potts, 2003). Finally, several studies have explored destination marketing communication and its support for local and regional development (Švec et al., 2024; Navrátil et al., 2013; Březinová & Skořepa, 2019; Březinová et al., 2025). In conclusion, understanding residents' awareness of tourism development, their beliefs, and the benefits it provides helps policymakers design and adopt long-term, sustainable strategies (Harun et al., 2018). Despite the expansion of research on sustainable tourism and consumers' perceptions, there remains a lack of studies analysing consumers' attitudes towards sustainable tourism in Slovakia. Therefore, the primary objective of the research is to examine attitudes towards sustainable tourism among rural residents in Slovakia. It concentrates on the environmental dimension and identifies the key motives and barriers to sustainable tourism attitudes.

## **THEORETICAL BACKGROUND**

### **Attitudes towards sustainable tourism**

According to Moyle et al. (2020), sustainable tourism takes into consideration environmental protection and the Sustainable Development Goals. To ensure sustainability in tourism, stakeholder collaboration is required (Abuselidze & Devadze, 2021). Sustainable

tourism represents a paradigm concentrating on residents, and their participation is a basis for success in tourism development (Panchenko et al., 2018; Sharpley, 2020). Moreover, González et al. (2019) stated that sustainable tourism is carried out in a balance of the issues of residents and tourism businesses. Recently, research on residents' attitudes towards tourism has expanded (Gursoy et al., 2019; Lepp, 2007; Ribeiro et al., 2016; Liang et al., 2016; Meimand et al., 2017). Peters et al. (2018) emphasise that residents' attitudes towards sustainable tourism encompass cognitive assessments of opinions, emotions, beliefs, and feelings. Based on residents' attitudes, their intentions demonstrate specific behaviours. A positive attitude towards tourism was linked to gender (female), employment, income, and education level (Inbakaran & Jackson, 2006). Numerous studies emphasise that positive attitudes towards tourism and its development correlate with perceptions of its positive and negative impacts (Gursoy et al., 2010; Suntikul et al., 2010). The findings of Gursoy et al. (2010) highlight that residents who perceive positive economic and cultural effects are more likely to support sustainable tourism. Additionally, Geng et al. (2015) identified the links between nature and its effects on an individual's attitude towards the environment. Empirical evidence on sustainable tourism perceptions offers a better understanding of sustainability and supports sustainable tourism development. Hence, the first research question (RQ1) is formulated as follows:

RQ1: What are rural residents' attitudes towards sustainable tourism in Slovakia

### **Barriers and motivations towards sustainable tourism**

The perception and development of sustainable tourism experience several barriers, including economic, political, environmental and social barriers. Dodds & Bulter (2009) identified the most common barriers as low awareness and education, low stakeholder engagement and inadequate funding. In addition to barriers, motivations are a crucial factor in sustainable tourism engagement. Empirical findings indicate that motivation is positively associated with visit intention, particularly when it reflects tourists' commitment to environmental protection and sustainable tourism development (Hunter, 2000). Moreover, a higher level of environmental sensitivity indicates stronger motivation and a stronger intention to revisit the destination. Finally, environmental knowledge correlates with visit motivation (Zhang & Lei, 2012). Based on that, exploring barriers and motivations for sustainable tourism contributes to a better understanding of sustainable tourism engagement. Thus, the following research questions are formulated as:

RQ2: What barriers prevent rural residents from engaging in sustainable tourism?

RQ3: What motivations influence rural residents' engagement in sustainable tourism?

## DATA AND METHODS

### Data collection

The research is based on quantitative study. A questionnaire survey was conducted in Google Forms, and the main aim was to uncover rural residents' expressed behaviour of sustainable tourism in Slovakia. Data were collected through an online questionnaire distributed from February to May 2025. A snowball sampling method was applied. The questionnaire link was distributed via social media platforms (Facebook and Instagram) and email. The main criterion required respondents to be residents of rural areas. After applying this criterion, the total sample consisted of 355 respondents living in rural areas in Slovakia. A complete summary of the research samples' socio-demographic information is displayed in Tab. 1. The majority of the sample were women (50.70%). Men represent 49.30% of the total sample. The most dominant age groups were 18-24 and 24-34 years. Regarding education, the largest group of respondents reported having completed secondary level of education (70.70%), followed by university degree (27.90%). Approximately 1% of the final sample completed primary education. In terms of occupation, the largest group consisted of employed individuals (42.50%), followed by students (32.40%). Retired participants represent 12.70% of the final sample. As for occupation, the majority of the sample were employed (42.54%) and students (32.11%).

**Table 1** The distribution of the research sample

Indicators		Percentage (%)
Gender	Men	49.30%
	Women	50.70%
Occupation type	Employed	42.54%
	Student	32.11%
	Unemployed	1.69%
	Maternity Leave	3.10%
	Retired	12.68%
	Freelancer	7.89%
	Age	18 – 24
	25 – 34	24.79%
	35 – 44	9.86%
	45 – 54	12.39%
	55 – 64	8.73%
	More than 65	11.83%
Education level	Primary	1.40%
	Secondary	70.70%
	University degree	27.90%

Source: authors' research (2025)

## Research design and statistical analysis

The questionnaire included Likert-type questions in which respondents evaluated selected statements using 7-point scales (1 - I completely disagree, 7 - I completely agree with the statement), as well as questions on motivating factors and barriers using 7-point scales (1 - the least important factor, 7 - the most important factor). Operationalisation of variables are shown in Tab. 2. The selected motivating factors involved 11 items as followed: F1- interest in nature conservation and biodiversity, F2- interest in responsible consumption, e.g. preference for eco-hotels, F3- interest in supporting the economy and local communities (e.g., prioritising guesthouses, local restaurants), F4- interest in local gastronomy, festivals, crafts, F5- sense of responsibility, F6- interest in a healthy lifestyle - I prefer stays in nature, active forms of tourism, e.g. cycling, hiking, agrotourism, F7- seeking new experiences, F8- an opportunity to learn about environmental, social and economic issues, F9- current trends, F10- social expectations as well as F11- personal belief in the importance of sustainability.

**Table 2** Operationalisation of variables

Construct	Operational items	Measurement
Statements regarding the motivation for sustainable tourism	What is your attitude towards the following statements? (Items S1 – S11)	Likert-type scale: 1- completely disagree; 7- completely agree
Statements regarding the environment and sustainable values in tourism	What is your attitude towards the following statements? (Items T1 – T12)	Likert-type scale: 1- completely disagree; 7- completely agree
Motivating factors for sustainable tourism	Which factors would motivate you to choose sustainable tourist destinations? (Factors F1 – F10)	Likert-type scale: 1- the least important factor, 7- the most important factor
Barriers for sustainable tourism	What are the main barriers to sustainable tourism? 14 items	Likert-type scale: 1- the least important factor, 7- the most important factor

Source: authors' processing (2025)

The list of statements regarding motivation for sustainable tourism and statements regarding the environment and sustainable values in tourism are shown in Tab. 3.

**Table 3** List of selected statements

<b>Coding</b>	<b>Item</b>
<b>S1</b>	I prefer organic and fair-trade products when travelling.
<b>S2</b>	Travelling in accordance with the principles of sustainability gives me a better feeling from the experience.
<b>S3</b>	I want to support local communities and the economy, so I prefer to stay with locals.
<b>S4</b>	I look for authentic experiences that respect the nature and culture of the country.
<b>S5</b>	I consider sustainable tourism to be a current trend.
<b>S6</b>	I believe that society should be responsible for protecting the environment when travelling.
<b>S7</b>	It is important for my social status to travel sustainably.
<b>S8</b>	I feel that my choice of destination is also influenced by what my friends/colleagues say about it.
<b>S9</b>	I feel pressure from family and friends to consider sustainability when travelling.
<b>S10</b>	I try to follow sustainable tourism trends in the media and adapt my decisions to these trends.
<b>T1</b>	My travel plans are often influenced by environmental concerns.
<b>T1</b>	I prefer accommodations that use renewable energy sources and minimise waste.
<b>T2</b>	I consider environmental protection more important than comfort or luxury on vacation.
<b>T3</b>	I try to minimise my environmental footprint when travelling (e.g., fewer flights, eco-friendly transportation).
<b>T4</b>	I would like to support destinations that strive for environmental sustainability.
<b>T5</b>	I try to support businesses that focus on eco-friendly practices
<b>T6</b>	I believe that my contribution to sustainable tourism can have a significant impact on the future of the planet.
<b>T7</b>	I usually prefer eco-friendly activities during my vacation.
<b>T8</b>	My travel plans are often influenced by environmental concerns.
<b>T9</b>	When possible, I prefer to visit "lesser-known" destinations and avoid mass tourism.
<b>T10</b>	I have a strong commitment to ensuring that my travel has minimal negative impact on nature.
<b>T11</b>	I care that my travel contributes to protecting natural areas.
<b>T12</b>	I prefer local and organic products as part of the travel experience.

Source: authors' processing (2025)

All statistical analyses were performed using XLSTAT software with the significance threshold set at 0.05. The Friedman test, followed by the Nemenyi post hoc test, was applied to detect differences in respondents' evaluations of statements and factors.

## RESULTS

The results showed statistically significant differences in respondents' evaluation of selected statements regarding the motivation for sustainable tourism ( $p$ -value  $\leq 0,0001$ ). The acquired results of the Nemenyi procedure indicate (Tab. 4) that Slovak respondents from rural areas agreed with statement S6 „I believe that society should be responsible for protecting the environment when travelling, “ and S4 „I look for authentic experiences that respect the nature and culture of the country.“ The highest disagreement was obtained with feeling pressure from family and friends to consider sustainability when travelling as well as trying to follow sustainable tourism trends in the media and adapt my decisions to these trends. Furthermore, rural respondents tend to disagree with the idea that sustainable travel is important for their social status, feel pressure from family and friends to consider sustainability when travelling, or prefer organic and fair-trade products when travelling. Low disagreement was also indicated in the case of S5, „I consider sustainable tourism to be a current trend“, and S2 „, Travelling in accordance with the principles of sustainability gives me a better feeling from the experience“.

**Table 4** Evaluation of statements regarding the motivation for sustainable tourism

Item	Mean	Mean of ranks	Groups						
S9	2.73	3.754	A						
S10	3.01	4.177	A						
S7	3.36	4.907		B					
S8	3.53	5.163		B	C				
S1	3.75	5.428		B	C	D			
S5	3.88	5.783			C	D	E		
S2	3.97	5.890				D	E	F	
S3	4.19	6.220					E	F	
S4	4.31	6.585						F	G
S6	4.69	7.093							G

Source: authors' processing (2025)

\*Statistically significant differences are indicated by distinct groups formed by Nemenyi procedure.

Similar results were obtained in terms of selected statements regarding the environment and sustainable values in tourism, which showed statistically significant differences in respondents' evaluations ( $p$ -value  $\leq 0,0001$ ). Based on Nemenyi's procedure (Tab. 5), it can be stated that respondents from rural areas agreed with supporting destinations that strive for environmental sustainability, preferring to visit "lesser-known" destinations and avoiding mass

tourism, preferring local and organic products as part of the travel experience, believing that their contribution to sustainable tourism can have a significant impact on the future of the planet as well as consider environmental protection more important than comfort or luxury on vacation. On the other hand, the rural respondents disagreed that their travel plans are often being influenced by environmental concerns, preferring eco-friendly activities during their vacation as well as having a strong commitment to ensuring that their travel has minimal negative impact on nature.

**Table 5** Evaluation of statements regarding the environment and sustainable values in tourism

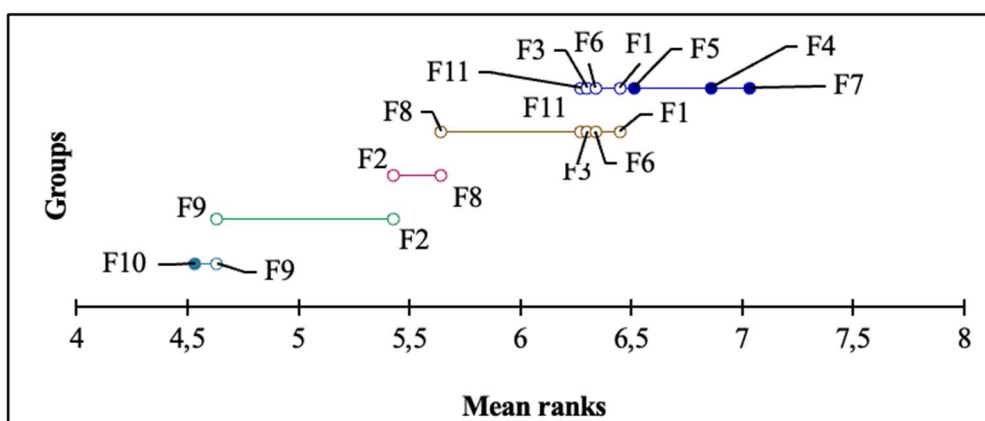
Item	Mean	Mean of ranks	Groups				
T8	3.56	5.041	A				
T7	3.80	5.814	A	B			
T10	3.86	5.911	A	B			
T1	3.95	6.158		B	C		
T11	3.99	6.285		B	C	D	
T3	4.05	6.434		B	C	D	
T5	4.07	6.503		B	C	D	
T2	4.15	6.701		B	C	D	E
T6	4.21	6.997			C	D	E
T12	4.32	7.151				D	E
T9	4.46	7.432					E
T4	4.50	7.573					E

Source: authors' processing (2025)

\*Statistically significant differences are indicated by distinct groups formed by Nemenyi procedure.

Furthermore, the results showed that Slovak respondents from rural areas evaluated motivating factors for sustainable tourism differently, as confirmed by the Friedman test ( $p$ -value  $\leq 0,0001$ ). Based on Nemenyi's procedure (Fig. 1), the results displayed by Demsar plot showed that the most important factors for rural Slovak respondents when selecting sustainable tourist destinations were as follows: seeking new experiences, interest in local gastronomy, festivals and crafts, sense of responsibility, interest in nature conservation and biodiversity, interest in a healthy lifestyle - I prefer stays in nature, active forms of tourism, e.g. cycling, hiking, agrotourism, interest in supporting the economy and local communities as well as personal belief in the importance of sustainability. The least important motivating factor was social expectations, followed by current trends and interest in responsible consumption, e.g. preference for eco-hotels.

**Figure 1** Demsar plot - motivating factors for a sustainable tourist destination



Source: authors' processing (2025)

\*F1- interest in nature conservation and biodiversity, F2- interest in responsible consumption, e.g. preference for eco-hotels, F3- interest in supporting the economy and local communities (e.g., prioritizing guesthouses, local restaurants), F4- interest in local gastronomy, festivals, crafts, F5- sense of responsibility, F6- interest in a healthy lifestyle - I prefer stays in nature, active forms of tourism, e.g. cycling, hiking, agrotourism, F7- seeking new experiences, F8- an opportunity to learn about environmental, social and economic issues, F9- current trends, F10- social expectations, F11- personal belief in the importance of sustainability.

In addition, comparable results were acquired regarding the barriers to sustainable tourism. Among the most important barriers were the following items: low awareness of tourists about sustainable options, mass tourism, insufficient education and awareness of sustainable tourism, unwillingness of tourists to change their usual behavior, higher price compared to regular destinations, insufficient financial support from tourism businesses, misconceptions about sustainable tourism (some tourists consider it less comfortable/too expensive) as well as excessive environmental burden. The least important barriers were resistance of local residents, insufficient regulation, unavailability of ecological technologies, limited availability of sustainable destinations and insufficient infrastructure.

**Table 6** Barriers to sustainable tourism

Items	Mean of ranks	Groups				
Resistance of local residents.	6.458	A				
Insufficient regulation.	6.544	A				
Unavailability of ecological technologies.	6.727	A	B			
Limited availability of sustainable destinations.	6.818	A	B	C		
Insufficient infrastructure.	7.237	A	B	C	D	
High costs of implementing sustainable measures.	7.501	A	B	C	D	E
Excessive environmental burden.	7.632		B	C	D	E
Misconceptions about sustainable tourism.	7.769		B	C	D	E
Insufficient financial support from tourism businesses.	7.793			C	D	E
Higher price compared to regular destinations.	7.858			C	D	E

**Table 6** (Continued)

Unwillingness of tourists to change their usual behaviour.	7.899				D	E
Insufficient education and awareness of sustainable tourism.	8.162				D	E
Mass tourism - a large number of tourists in a given destination	8.273				D	E
Low awareness of tourists about sustainable options.	8.330					E

Source: authors' processing (2025)

\*Statistically significant differences are indicated by distinct groups formed by Nemenyi procedure.

## DISCUSSION

The present study focuses on the attitudes of rural residents in Slovakia towards sustainable tourism. These attitudes are of significant importance, as local communities contribute to the long-term development of tourism. Previous studies highlight that sustainable tourism development cannot be achieved without the support of local communities (Gursoy & Rutherford, 2004; Nunkoo & Ramkissoon, 2010). Pavlič et al. (2019) emphasise that understanding rural residents' attitudes towards tourism could support the successful planning and implementation of tourism policies targeted at improving existing conditions and supporting sustainable development. Residents' attitudes toward tourism have been discussed in the scientific literature. Many studies agree that the support of residents for tourism development is affected by social, cultural, economic, and environmental impacts of tourism. A study by Zhao et al. (2011) highlights that the development of tourism needs to address conflict management among residents and the importance of social capital. Michálková et al. (2023) address the development management and cooperation of the interested group in the tourism development. According to Muresan et al. (2016), residents view tourism as a crucial factor for regional development. Similarly, the findings of Bagri and Kala (2016) suggest that demographic attributes play a significant role in shaping residents' attitudes towards tourism. The results showed that residents recognise the economic, social and environmental consequences of the tourism development. Other studies demonstrate that tourism development is positively affected by community quality of life (Yu et al., 2018). Moreover, research conducted by Chang et al. (2018) revealed that cultural impacts and characteristics of the local community significantly affect the tourism development support. The findings of Andereck & Vogt (2000) highlight that residents identify tourism positively and support most types of development in the tourism area. Moreover, the study indicates that residents' attitudes are associated with their support for tourism development; however, the intensity of the relationship varies across different communities. The findings of Kitnuntaviwat and Tang (2008) suggest that residents' perceptions of the benefits of tourism in urban areas are positively associated with tourism development. Similar results have been reported in studies

focused on examining residents' attitudes toward tourism development in the urban and rural context (Yoon et al., 2001; Dyer et al., 2007; McGehee & Andereck, 2004).

The study's findings suggest that rural respondents are mostly motivated by intrinsic factors, such as experiential enrichment, support for local communities, and a sense of responsibility. The results are consistent with the study by Pan and Zhou (2024), which confirms that individuals with strong sustainable-oriented norms are more likely to engage in pro-environmental behaviour during travel. Another important determinant of travel motivation was satisfaction and loyalty (Chiu et al., 2016; Mohamad et al., 2011). Additionally, perceived quality and word-of-mouth recommendations have been identified as relevant factors influencing behavioural intention (Ozdemir et al., 2012; Chang et al., 2014). Regarding demographic factors, Uçgun and Narıcı et al. (2022) found that women and younger, more educated, higher-income consumers exhibited higher levels of environmental awareness. The study also indicated that consumers living in urban areas demonstrated a higher level of environmental awareness. According to Wee (2019) and Čvirik and Daneshjo (2022), age represents a significant factor of environmental perception. Especially the younger generation of consumers, Generation Z, showed as ecologically and socially conscientious (Wee, 2019). Moreover, this generation is strongly involved in sustainable tourism practices. In this context, Seyfi et al. (2025) stated that environmental issues are reflected in their travel habits. Similarly, Prayag et al. (2025) found that Generation Z is more interested in environmental concerns than other generations. In terms of gender, women are more focused on the environmental concerns of tourism (Yilmaz et al., 2009; Čvirik et al., 2021). Another study found that married couples with children reported higher levels of awareness compared to married couples with no children (Yahya et al., 2015).

Our results indicate a connection to low awareness and knowledge of sustainable tourism. These findings are in line with Vieira et al. (2023), who identify a key barrier as the knowledge gap regarding sustainable tourism practices. According to Rapo & Zelenaj (2025), the main psychological barriers to adopting sustainable tourism include low awareness, higher costs, cognitive dissonance, low level of trust, social norms and emotional detachment. Social responsibility increases trustworthiness (Martíšková et al., 2025). A considerable number of travellers have limited knowledge of how to identify and participate in sustainable tourism options. Another critical barrier for sustainable tourism is costs. According to Kholijah (2024), sustainable accommodations and environmentally friendly travel choices are more expensive, which discourages price-sensitive tourists. In contrast, the findings of Švec et al. (2021) suggest that environmentally oriented tourists exhibit a higher willingness to spend. This was also supported by Linnes et al. (2022). Moreover, tourists choosing green accommodation facilities represent a value-driven segment that is willing to spend more

during their holidays, indicating that sustainability can also be economically beneficial for tourism providers. Additionally, Gössling (2018) identifies a lower level of comfort and a limited range of amenities as additional obstacles to sustainable tourism. To overcome these barriers, targeted strategies need to be developed to enhance knowledge, minimise the inconvenience, and change the social norms. Boosting knowledge through educational campaigns is necessary to address awareness gaps in sustainable tourism (Hartman & Sijtsma, 2018; Timur & Getz, 2009). Influencers and social media can successfully present environmental practices as positive behaviour examples (Lee et al., 2021). According to Cervelló-Royo et al. (2026) the generative AI shapes consumer behaviour, satisfaction, and the overall tourism experience by enabling personalised recommendations and improving customer service interactions. Ingrassia et al. (2022) suggest emphasising the environmental and social issues of tourism through attractive content such as social media platforms, interactive tools and documentaries. In addition, Rondinelli and London (2003) highlight that coordinated collaboration among governments, non-governmental organisations, and the private sector strengthens these initiatives. According to Holmes et al. (2021), experiential learning, including eco-tourism initiatives that incorporate local communities stimulate deeper dedication to sustainable tourism. There is also a growing need to build trust through transparent, measurable, and sustainable practices. Finally, Ahmed et al. (2021) suggest that certification, which helps combat greenwashing, builds consumer confidence.

## CONCLUSION

The study analysed the attitudes, motives, and barriers to sustainable tourism among rural residents in Slovakia. The findings of the study support the literature on attitudes towards sustainable tourism and point out the significance of environmental and sustainable values in determining perceptions of tourism development. The results offer theoretical evidence from rural areas in three ways. Firstly, it identifies motivation for sustainable tourism. Secondly, it examines the main barriers to sustainable tourism. Finally, it explores the attitudes of rural residents towards the environmental and sustainable values of tourism. Therefore, the results contribute to a better understanding of how rural residents view sustainable development.

The empirical evidence revealed that looking for new experiences, supporting local communities, and a sense of responsibility were the main drivers of choosing a sustainable destination. These results suggest that value-based motivations contribute significantly to forming residents' attitudes towards sustainable tourism. More specifically, the willingness to support local communities and a sense of environmental responsibility underline the significance of social and environmental values in decision-making in tourism. Therefore, from a managerial perspective, the findings suggest that destination marketing strategies

should highlight authentic experiences, local culture and communities. Highlighting these factors may help correspond with tourism development with the expectations and values of residents, thus promoting their support for sustainable tourism initiatives. Moreover, the findings pointed out the most important barriers to sustainable tourism, including low levels of awareness and mass tourism. These barriers indicate that sustainable tourism development may be restricted not only by structural factors but also by a lack of knowledge and awareness among residents. From this perspective, the findings suggest that marketing strategies should focus on educating regarding sustainability and behavioural change. Additionally, destination management organisations and local authorities should support educational campaigns and communication activities that expand the awareness of sustainable tourism fundamentals. Furthermore, incorporating locals in tourism planning and decision-making processes may lead to more substantial acceptance of tourism strategies and support the development of the destination in the long-term.

Finally, several limitations of the present study should be noted. Firstly, the study is focused on rural residents, and the findings may not fully capture the perspective of the broader population. Thus, further research should be conducted to extend the study area at the national level. Secondly, the study concentrates on the self-reported attitudes and intentions associated with sustainable tourism, instead of observing actual behaviour. Finally, the research did not consider residents' personal experience with overtourism. Therefore, future research could include this variable, as such experiences may significantly affect residents' attitudes toward sustainable tourism.

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# **PRIORITISATION OF SUSTAINABLE DEVELOPMENT OBJECTIVES AND THEIR ACHIEVEMENT IN MUSEUMS AND GALLERIES IN SLOVAKIA**

**Kristína Pančíková<sup>a\*</sup>, Ján Veselovský<sup>a</sup>, Viktória Gergelyová<sup>a</sup>**

<sup>a</sup>Department of Tourism, Faculty of Central European Studies, University of Constantine the Philosopher, Nitra, Slovakia

\* corresponding author: kpancikova@ukf.sk

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## **Abstract**

Sustainable development represents an important framework for the functioning of cultural institutions, including museums and galleries. The aim of the study is to empirically analyse the prioritisation of social, environmental and economic objectives related to sustainable development in selected museums and galleries in Slovakia and the ways in which these objectives are achieved in the context of tourism. The study is based on primary data obtained from 36 museums and 14 galleries in Slovakia between May and September 2024. The data were analysed using non-parametric statistical methods, including the Friedman, Wilcoxon and McNemar tests. The results indicate that museums and galleries prioritise social objectives over environmental and economic objectives. In achieving social objectives, they are primarily oriented towards approaches focused on making content accessible and interpretable for visitors. In achieving environmental objectives, they tend to focus more on operational measures than on developmental environmental initiatives. In achieving economic objectives, the findings reveal a stronger orientation towards revenue-generating activities than towards cost-reduction measures. The study contributes to a better understanding of how museums and galleries approach sustainable development objectives in practice, with a focus on Slovakia and its relevance for the Central European context.

Keywords: gallery, museum, social, environmental and economic objectives, sustainability, tourism

## **INTRODUCTION**

Sustainable development has become an increasingly important aspect of the management of cultural institutions, reflecting global challenges related to environmental protection, economic efficiency, and social responsibility. Considering these mounting threats and challenges, museums and galleries, while maintaining their core mission of acquiring, preserving, and researching collections, have decided to allocate greater resources towards the implementation of diverse management strategies. These strategies encompass a wide range of approaches, including marketing and branding initiatives, as well as fundraising efforts. The primary objective of this strategic shift is to harness the potential of culture to act in an anti-cyclical manner (Esposito et al., 2019). In a similar vein, Cerquetti, Sardanelli, and

Ferrata (2024) have identified sustainability as one of the most pressing needs of museums worldwide in the last decade.

These institutions are now expected not only to preserve and present cultural heritage, but also to actively contribute to shaping social awareness and promoting the development of sustainable practices. For museums and galleries, this means not only implementing environmental and economic measures, but also taking into account social aspects such as inclusion, accessibility, and education, creating a comprehensive framework for their sustainable management in the 21st century. This approach is consistent with the recent definition of a museum adopted by the International Council of Museums (ICOM) in 2022. Cognizant of the imperative to address contemporary environmental and social challenges, ICOM underscores that museums are not merely non-profit institutions dedicated to research, conservation, and the presentation of heritage, but also accessible, inclusive, and promote diversity and sustainability in all their dimensions. The notion of sustainability, intrinsic to the museum's mission, is deeply intertwined with its long-standing nature as a permanent institution and its responsibility to serve current and future generations (Cerquetti, Montella, 2021). Consequently, museums and galleries bear not only the responsibility for the preservation of cultural heritage, but also the obligation to actively contribute to the formulation of ethical, environmental, and social strategies that ensure their long-term relevance and sustainability within a dynamic and constantly evolving social environment.

This trend, predicated on global sustainability challenges, is particularly salient in the context of small museums and galleries, which often confront specific conditions such as limited financial and material resources, a paucity of professional staff, and infrastructural constraints. An exploration of the manner in which these smaller institutions implement sustainable principles is imperative to comprehending their capacity to contribute to the sustainable development of tourism products. Notably, even museums and galleries with limited commercial recognition can play pivotal roles within their local communities by offering distinctive and authentic experiences to visitors. These contributions can be substantial in fostering diversification and advancement in the realm of sustainable tourism.

In this context, the rationale for sustainability studies in the management of small museums and galleries is twofold: it is both essential and a priority for understanding their potential for use in tourism. In Slovakia, where small museums and galleries form an integral part of local culture and heritage, this issue remains under-researched. If these institutions are able to respond to sustainability trends and systematically apply environmental, economic and social

approaches in their activities, they can play an important role in the development of regional tourism.

Despite the growing number of studies focusing on sustainability in museums and galleries, existing research predominantly addresses individual aspects of sustainability (social, environmental or economic) separately (e.g. Loach et al., 2016; Cole et al., 2020; Vanni, 2023), while less attention is paid to their interrelationships and their prioritisation in managerial practice. At the same time, only limited research has examined how these approaches are implemented through specific managerial activities, particularly in tourism-related settings (Vareiro et al., 2021; Torabi Farsani et al., 2023).

In the context of Central and Eastern Europe, and especially in Slovakia, empirical research remains underdeveloped, particularly with regard to the prioritisation of sustainability objectives and the ways of achieving them in museums and galleries in the context of tourism. This study addresses this research gap by examining these aspects in selected museums and galleries in Slovakia.

## **THEORETICAL BACKGROUND OF THE STUDIED ISSUE**

The relationship between museums, galleries, and sustainability is a dynamic and ambivalent one, which can be understood on two levels, as posited by Baki Nalcioglu (2021) and Cerquetti, Sardanelli, and Ferrata (2024). On the one hand, social, economic, and environmental sustainability are key tools that can contribute to the development and stability of museums and galleries. A substantial body of research has examined sustainability in museums and galleries, with a focus on social and cultural dimensions (Loach, Rowley, & Griffiths, 2016; Taurino, 2023), and environmental dimensions (Perzolla, Carr, & Westland, 2018; Cole, Lindsay, & Akturk, 2020; Dwyer, 2021) and economic dimensions (Vanni, 2023). Such an approach, focused on individual dimensions of sustainability separately, does not allow for a comprehensive understanding of how museums and galleries balance these objectives in practice and which of them are prioritised.

Conversely, museums and galleries play a pivotal role in promoting sustainable development, particularly in the tourism sector. The role of museums in sustainability has been examined by several authors (Gustafsson, Ijla, 2017; Brown, 2019; Garthe, 2022), who underscore the significance of museums in promoting sustainable development, particularly in local and regional contexts. This contribution is particularly pronounced in the context of tourism (Vareiro, Sousa, & Silva, 2021; Torabi Farsani, Moazzen Jamshidi, & Hekmat, 2023).

According to Maryimova (2021), museum tourism is a distinct form of cultural tourism that encompasses the creation of exhibitions, the organization of internal and external exhibitions, educational seminars, lectures, public events, training, the provision of access to museum shops, and the production and sale of museum merchandise (Maryimova, 2021).

Pop and Borza's study (2015), which was based on a qualitative survey of expert opinion in Romania, identified two opposing approaches to the sustainable management of museums and galleries. The first approach associates sustainable management primarily with the high production of cultural resources, but also with the efficient consumption of natural resources and the finding of appropriate solutions to raise additional funds. The second approach is based on the fact that the aim of a museum or gallery should not be the raising of money or the adaptation to the needs of visitors. A museum or gallery is said to be sustainably managed when a specific entity (e.g., the state, a municipality, or a private donor) provides all the necessary resources to enable it to carry out its traditional functions of collecting, preserving, and researching cultural heritage.

In order for museum and gallery management to be sustainable, it is essential that sustainability principles be incorporated into the planning and design of objectives. According to Kesner (2005), sustainability should be an integral part of all phases of activities. The management of museums and galleries should ensure the management and optimization of conditions and resources to achieve the set objectives. In the context of comprehensiveness and sustainability, the objectives should be social, environmental, and economic in nature.

*Social objectives:* Meeting the needs of visitors (Martíšková et al., 2022) is an integral component of the mission of museums and galleries, which is not only the preservation but also the dissemination of cultural values. Therefore, Olejárová (2015) states that cultural attractions acquire their significance only in the context of tourism. Uzell (1998) justifies the importance of cultural attractions by the fact that they enable people to understand themselves. Timothy (2011) underscores the role of cultural institutions in facilitating communication, offering individuals a means to find equilibrium in today's fast-paced world by drawing upon their understanding of the past. Oriška (2001) further emphasizes the societal benefits of tourism, asserting that museum and gallery visits contribute to the enhancement of the social, cultural, professional, and educational levels of the population. They serve as conduits for visitors, reminding them of national traditions and conveying historical narratives, thereby reinforcing national awareness (Palmer, 2005). In this regard, sustainability offers novel opportunities for museums and galleries. It suggests not only appealing methods of interpreting and communicating heritage and reaching broader

audiences but also providing innovative and effective solutions for managing collections and relationships with local stakeholders (Merriman, 2008). Taurino (2023) explores the integration of AI in museum institutions, considering its potential benefits and challenges in conjunction with conventional curatorial practices within the context of sustainability in the museum sector.

Europa Nostra (2006) identifies cultural tourism as a conduit for both knowledge and joy, underscoring its potential role in the dissemination of information and the cultivation of human intellect. The expansion of the museum and gallery sector, a fundamental prerequisite for the successful implementation of cultural tourism, serves to broaden the intellectual landscape and stimulate critical thinking. Furthermore, these institutions contribute to the psychological well-being of visitors, thereby facilitating opportunities for leisure that are conducive to personal growth and development. Furthermore, the enhancement of the aesthetic appeal of the environment through cultural institutions has been demonstrated to foster a sense of pride and cohesion among local communities (Kesner, 2005; Anthony, 2015).

Social objectives are therefore achieved in practice through specific activities such as content interpretation, accessibility of exhibitions, and visitor-oriented services.

*Environmental objectives:* As the world continues to experience rapidly changing climatic conditions, institutions from all sectors are undergoing a process to become more sustainable, seeking to reduce or eliminate their harmful impacts on the ecosystem. Museums have a key role to play in this process, as they take on the responsibility of being community leaders and change makers (Dwyer, 2021). Their environmental objectives are to ensure the protection of both tangible and intangible cultural assets, while also maintaining respect for the environment. However, the demands of these activities, such as maintaining proper standards of light, temperature, humidity, and other factors, impose significant demands on energy consumption (Pencarelli, Cerquetti, & Splendiani, 2016). Consequently, museums and galleries should consider the environmental impacts of their activities and the materials they utilize. A study by Cole, Lindsay, and Akturk (2020) identified five key themes in the green building sector as it pertains to museums: recycling, water management, energy efficiency, the use of eco-friendly materials, and environmentally sustainable landscaping.

Museums and galleries have the potential to contribute to environmental improvement if they are preserved. Their restoration and reconstruction often leads to their use in tourism, which also requires a satisfactory structural and technical condition (Veľasová, 2001; Kesner, 2005). However, given the vulnerability of culture and the negative effects of tourism, the

willingness of management to use cultural attractions in tourism can vary considerably. Fyall and Garrod (1998) identify the determination of the optimal level of exploitation in tourism as a dilemma for cultural attraction management, while Kerr (1994) explains this phenomenon by noting that what is beneficial for cultural preservation does not necessarily promote tourism, and conversely, what is beneficial for tourism is rarely detrimental to cultural preservation. According to Podušelová (2001), cultural attractions thus often encounter inappropriate management approaches that either prioritize the success of the tourism market over the protection of cultural values or make tourism market activities inaccessible due to potential negative effects. Du Cros and McKercher (2015) therefore call for the sustainable use of cultural attractions in tourism based on a balance of conservation and tourism industry principles. In the context of environmental objectives, Olejárová (2015) underscores the significance of control, emphasizing the maintenance and care of these objects, which should persist even when they are made available to the tourism market. This is a prerequisite for the effective guidance and distribution of visitor flows. The prevailing conservatism in the administration of cultural attractions, as indicated by Bramley (2001) and Young (2006), results in deficiencies within the tourism market. Hughes and Carslen (2010) propose a more pronounced commercialization approach to enhance the alignment with tourism demand. Garrod, Fyall, and Leask (2002) characterized the management of cultural tourism attractions as one that aims to minimize the negative effects arising from tourism uses that could cause a loss of authenticity and cultural values on the one hand, and to maximize the benefits to visitors on the other.

Environmental objectives are therefore achieved in practice through specific activities such as building maintenance, waste management, and the use of energy-efficient technologies.

Non-economic objectives involving the sustainable use of cultural attractions in tourism have also been highlighted by other authors (e.g., Du Cros & McKercher, 2002; Kesner, 2005; Ivanovic, 2008; Leask, 2010; Boniface, 2013; Loach, Rowley, & Griffiths, 2016; Taurino, 2023). These objectives include ensuring the sustainable use of cultural attractions in tourism, which is related to the protection and preservation of culture for future generations and meeting demand through the dissemination of cultural values. The prioritization of the social and environmental objectives of cultural tourism attractions aligns with the principles of tourism development. Non-economic objectives of tourism are prioritized over economic objectives by Gúčik et al. (2010). This approach is further elaborated by Coman (2018), who contends that while monetary gains assume greater significance, social cohesion and

museums' commitment to communities should prevail, as museums serve as creators of cultural capital, individual and collective meaning.

Economic objectives. Economic sustainability constitutes a fundamental dimension of culture-producing institutions, which must demonstrate their ability to deliver on their promises, fulfil their public service function, and pursue objectives of general interest (the common good). Achieving economically sustainable management, in conjunction with high-quality research and scholarly production (e.g., exhibitions and publications), and the enhanced enjoyment associated with the 'new' functions of the museum, must be essential objectives to ensure all levels of sustainability and to cultivate public loyalty (Vanni, 2023). Given the various forms of ownership, organization, and legal structure characteristic of museums and galleries, their economic objectives may vary significantly. The well-documented challenge of culture's self-financing capacity, initially highlighted by UNESCO in the late 20th century (1997), persists into the present era (Association of Museums in Slovakia, 2011). This persistent issue often results in the private sector, driven predominantly by profit motives, demonstrating limited interest in managing these cultural institutions. Kesner (2005) attributes this to the absence of adequate legislative norms and tax policies that would facilitate the private sector's contribution to supplementing public budgets' limited resources and stimulate economic growth. Many museums and galleries in Slovakia function as contributory and budgetary organizations, as regulated by Act No. 523/2004 Coll. on the Budget Rules of Public Administration and on Amendments and Additions to Certain Acts. Alternatively, they may operate as non-profit organizations, governed by Act No. 213/1997 Coll. on Non-profit Organizations Providing Services of General Benefit, as amended. The economic objectives of their management are therefore usually efficient cost spending or profit generation for self-financing of the main activity.

In regard to the economic objectives and market activities of cultural attractions, Timothy (2011) identifies admission revenue, donations, grants, sponsorships, event revenues, and commercial revenues (e.g., sales of souvenirs, additional performance aids, provision of hospitality or accommodation services) as common sources of funding for cultural attractions. In instances where cultural attractions are established by the state, they are directly linked to the state budget, and state departments are responsible for their full funding. The management of these institutions is subject to budgetary constraints, which may be adjusted during the fiscal year if necessary. In addition to the above, the State may allocate subsidies or grants to the operations of other cultural institutions. In Slovakia, the Ministry of Culture of the Slovak Republic (MK SR) is responsible for providing subsidies to cultural institutions. The

programs ‘Renew Your House’ [Obnovme si svoj dom], ‘Culture of Disadvantaged Groups’ [Kultúra znevýhodnených skupín obyvateľstva] (MK SR, 2025) are utilized for this purpose.

According to Kesner (2005), Hughes, Carlsen (2010), Timothy (2011) Vareiro, Sousa and Silva (2021) and Vanni (2023) the tourism market is regarded as a potential catalyst for enhancing the performance and economic value of cultural attractions. The augmentation of visitors to these attractions is associated with an increase in admissions, thereby creating opportunities to diversify revenue sources for museums and galleries (Museum Strategy Consultancy, 2025). However, for tourism to make a more substantial contribution to the financial sustainability of cultural attractions, it is essential to engage in a diverse array of activities in the marketplace that extend beyond the scope of their primary business. According to Veľasová (2001), the utilization of cultural attractions in tourism contributes to the generation of funds for their ongoing maintenance and further preservation. Consequently, Vanni (2023) asserts that museums and galleries should adopt management guided by innovative strategies, economic plans, and business models capable of generating revenues that complement the resources provided by public administration. Bernardi (2005) acknowledges the contribution of the tourism market to improving the economic situation of cultural attractions; however, he also points out that it does not address the long-term problem of cultural financing.

As Trimarchi (1993) noted during the 1990s, despite the value people place on culture, they are not willing to pay adequately for it in the tourism industry. This may be due to the fact that culture is generally regarded as a public good (Throsby, 1982). In this regard, John (2008) identified a key objective of cultural attractions to instill a financial support for culture and the arts among individuals and organizations. The utilization of museums and galleries in tourism, which is expected to enhance economic conditions, is contingent upon a fundamental shift in perspective regarding culture and its economic nexus, as posited by Kesner (2005).

Based on the above, economic objectives are achieved in practice through specific activities such as securing subsidies and grants, setting appropriate admission fees, and developing revenue-generating activities related to tourism.

Overall, sustainability in museums and galleries is reflected in the integration of social, environmental and economic objectives, which together shape their role in the tourism sector and their long-term development. However, there is still limited knowledge about how museums and galleries balance these objectives in practice and which specific ways they prioritise when achieving them, particularly in the context of tourism.

## METHODS

The aim of the study is to empirically analyse the prioritisation of social, environmental and economic objectives related to sustainable development in selected museums and galleries in Slovakia and the ways in which these objectives are achieved in the context of tourism. Based on the aim of the study, four hypotheses were formulated:

H1: Museums and galleries prioritise social objectives over environmental and economic objectives.

H2: Museums and galleries are more oriented towards ways of achieving social objectives that focus on making content accessible and interpretable for visitors than towards other ways.

H3: Museums and galleries are more oriented towards operational measures than towards developmental environmental initiatives when achieving environmental objectives.

H4: Museums and galleries are more oriented towards ways of increasing revenues than towards ways of reducing costs when achieving economic objectives.

Primary data collection was carried out using the method of sociological questioning and the technique of structured questionnaire. The questionnaire survey was carried out between May and September of 2024. The survey was disseminated electronically to the managers of the entire core set of museums and galleries. The Register of Museums and Galleries, maintained by the Ministry of Culture of the Slovak Republic, currently records 110 museums (including 18 separate organizational units or specialized museums of the Slovak National Museum) and 29 galleries (including 4 separate organizational units of the Slovak National Gallery). Twenty-two museum managers and eight gallery managers responded to the first survey. Following a repeated call, the number of questionnaires increased to 50, of which 36 were completed by museum managers and 14 by gallery managers. The resulting sample is representative of 36% of the base population.

The prioritisation of social, environmental and economic objectives was determined based on their ranking according to importance. The ways of achieving these objectives were examined through the selection of specific activities included in the questionnaire, which were grouped according to individual categories of objectives. Respondents indicated the activities that are part of their institutional practice.

Hypothesis H1 was tested using the Friedman and Wilcoxon tests. The Friedman test is a nonparametric analogue of two-factor analysis of variance with one observation in a subclass, while the Wilcoxon test is used to test hypotheses about the agreement of two means (Elliott and Woodward, 2014). The utilization of these selected tests will facilitate the identification

of significant discrepancies in the prioritization of objectives and enable the generalization of the prioritization of objectives across the museums and galleries under study.

Hypotheses H2–H4 were tested using the Friedman and McNemar tests. The McNemar test was used to determine statistically significant differences in the order of responses in multiple-choice questions (i.e., no scale). Verification of the results was carried out at a significance level of  $\alpha = 0.1$ .

## RESULTS

The oldest museum association, the Museums Association (2008), considers sustainability to be a fundamental concept for the functioning of museums and galleries. The optimal use of all resources and social responsibility are the basis for this concept. According to Pencarelli, Cerquetti, and Splendiani (2016), the provision of sustainability in museums and galleries is contingent on the fulfilment of relevant social, environmental, and economic objectives. The prioritization of these objectives in their managerial practices serves as the foundation for their endeavors within the tourism market.

Friedman's ordinal test revealed that the primary objectives of Slovak museums and galleries are social in nature, encompassing the presentation of collection objects and the fulfillment of visitors' diverse spiritual needs. The results of the primary survey indicate that these objectives are integral to the management of nearly all (96%) of the museums and galleries surveyed. The prioritization of these objectives is congruent with the mission of cultural institutions and is indicative of the managers' cognizance of the prevailing imperative to disseminate cultural knowledge and educate the populace. A secondary group of non-economic objectives is also pursued by museums and galleries. These objectives encompass environmental objectives aimed at safeguarding cultural values while adhering to environmental principles. However, these objectives are not addressed in the management of 10% of the museums and galleries surveyed. The third category of objectives, economic objectives aimed at cost-effectiveness and profit generation to support self-financing, is not taken into account in the management of 6% of the institutions.

Despite the frequent discourse on the challenging implementation of these measures within Slovakian contexts, the underlying causes may not solely reside in the perceived lack of managerial efforts to enhance the economic viability of museums and galleries. Rather, the prevailing unreformed cultural environment in Slovakia, characterized by a predominant public sector, appears to exert a determinative influence on the financial sustainability of

these cultural institutions. Consequently, this environment may impose substantial constraints on the proactive management performance aimed at economic optimization. However, the successful and long-term fulfillment of non-economic objectives is also contingent on properly structured financing, underscoring the significance of the economic principle of sustainability.

The results of the Wilcoxon test confirm hypothesis H1, as they show a statistically significant difference between social and other groups of objectives ( $p\text{-value} < \alpha = 0.1$ ), with environmental and economic objectives at approximately the same level of importance ( $p\text{-value} > \alpha$ ) (Tab. 1).

**Table 1** Hierarchy of objectives of the surveyed museums and galleries in Slovakia

Objectives	Friedman test (Average ranking; 1 = most important, 3 = least important)	Wilcoxon test	
		Ranking	P-value
Social	1.82	1.	-
Environmental	2.39	2.	0.056
Economic	2.51	2.	0.652

Source: own elaboration, 2025.

Museums and galleries pursue a variety of social, environmental, and economic objectives, which the Friedman test organizes according to the intensity of use.

According to managers, the application of diverse interpretation techniques, the provision of animation services for visitors, and the implementation of appropriate operating hours are the most effective strategies for achieving the social objectives of museums and galleries. These measures have the potential to significantly enhance visitor experience and satisfaction by offering interesting interpretation and original animation adapted to the age of visitors. Examples of commendable practices in the implementation of interactive solutions, virtual and augmented reality in the environment of Slovak museums include the Museum of Gemersko-Malohont, the Museum of Liptov, the Museum of Červený kláštor, and the Museum of Spiš. Notably, the Slovak Olympic and Sports Museum in Spišská Nová Ves and the East Slovak Museum in Košice have also adopted interactive solutions, underscoring the broader adoption of these technologies within the cultural sector (Gemersko-Malohontské Museum, 2023; UTAI, 2024).

The assertion regarding the adequate operating hours of museums and galleries in Slovakia may be, to some extent, declarative in nature. A review of the websites of these institutions reveals that many are open only until the afternoon, typically until 4:00 pm or 5:00 pm. Visitors arriving in cities later in the evening often find these establishments to be closed.

Additionally, these institutions are prone to closing during staff lunch breaks, weekends, and holidays, a practice that aligns with the seasonal fluctuations of short-term tourism. Consequently, the current opening hours of Slovak museums and galleries may not align with the demands of the tourism market, potentially due to constraints related to staffing and funding.

One of the less frequently employed methods of achieving the social objectives of museums and galleries is the periodic replacement of exhibited objects (exhibits). Less than 50% of the museums and galleries in the sample pay attention to it.

A significant proportion of museums and galleries – 46%, to be precise – employ feedback collection as a means of assessing visitor satisfaction rates, thereby aligning their social objectives with the overarching mission of the institution. The significance of this practice lies in its potential to inform crucial decisions, including the enhancement of services, the refinement of training programs, the evaluation of staff performance, and the adjustment of organizational structures within museums and galleries. Consequently, this information source, which is frequently underutilized, warrants greater recognition and consideration for its invaluable contributions to the field.

A total of 4% of the sample respondents identified alternative methods for achieving social objectives, including the publication of relevant materials and the implementation of educational programs within museums.

The results of the McNemar test demonstrate that, from the perspective of the surveyed Slovak museum and gallery managers, the most prevalent methods for achieving their social objectives include the utilization of diverse interpretive techniques, the provision of animation services, and the availability of exhibitions and displays during designated operating hours. There are no statistically significant differences ( $p\text{-value} > \alpha$ ) between the ranking of these methods aimed at disseminating cultural values and meeting visitor needs. In contrast, museums and galleries expressed less concern with changing exhibits and gauging visitor satisfaction ( $p\text{-value} < \alpha$ ). These findings confirm H2, as they indicate that museums and galleries are more oriented towards ways of achieving social objectives focused on making content accessible and interpretable for visitors compared to other ways of achieving social objectives (Tab. 2). This result also indicates that museums and galleries face increasing demands for modern forms of interpretation and content accessibility, particularly from younger generations, which may represent an organizational and financial challenge.

**Table 2** Ranking of ways of meeting the social objectives of museums and galleries

Ways of meeting the objectives	Friedman test (Average ranking)	McNemar test	
		Ranking	P-value
Use of diverse interpretive techniques	3.43	1.	-
Offering animation services (activities)	3.28	1.	0.607
Public accessibility through appropriately designated operating hours	3.14	1.	0.678
Frequent renewal of exhibits	2.60	2.	0.043
Survey of visitor satisfaction	2.55	2.	1.000

Source: own elaboration, 2025.

The results allow the identification of the main ways used by museums and galleries to achieve environmental objectives. This should result in the protection and enhancement of cultural and natural heritage, as well as the environment in general. According to museum and gallery managers, the most common contributions of these institutions to this objective are regular maintenance of the buildings in which they are housed and waste sorting. As these institutions are often designated as national cultural monuments, interventions in the structural and technical condition of these buildings must take into account the protection of heritage values. The efforts of museums and galleries to prevent the often controversial and costly reconstruction or restoration of inadequate buildings by regular care of the buildings can be assessed positively. In practice, however, there are a number of cases in which reconstruction is not carried out for financial reasons, despite the fact that it would make better use of the buildings for the benefit of tourism, create more suitable conditions for storing collections, and ensure savings in operating costs.

From an environmental perspective, museums and galleries demonstrate a comparable level of commitment to waste sorting. While this practice is not inherently associated with the conservation and presentation of collections, museums and galleries, in their capacity as educational and training institutions, serve to enhance public awareness regarding the imperative for environmental sustainability. Simultaneously, they cultivate their reputation as entities that are socially responsible in the context of tourism.

Museums and galleries have been shown to achieve environmental objectives through the implementation of energy-efficient equipment and renewable energy sources. Given the substantial energy consumption necessitated for the preservation of collections and the maintenance of optimal conditions for light, temperature, and humidity, the integration of these technologies into museum and gallery operations is imperative. A survey of museums and galleries reveals that approximately 25% currently utilize these systems. The lack of interest among the majority can be attributed primarily to the initial financial costs associated with their acquisition. The use of recycled materials can be considered economically

advantageous. Their application is well-suited for products created by workshop participants. Moreover, numerous galleries are presently organizing exhibitions that concentrate on the fabrication of artworks from recycled materials, representing a novel artistic genre.

The findings of the McNemar test suggest that museums and galleries prioritize regular maintenance of their facilities and waste sorting in their efforts to meet environmental objectives. Other environmentally oriented activities are undertaken less frequently. These findings confirm H3, indicating that museums and galleries are more oriented towards operational measures than towards developmental environmental initiatives when achieving environmental objectives (Tab. 3). This result indicates that the environmental dimension of sustainability in museums and galleries is influenced by structural constraints, particularly financial resources and the heritage protection of buildings, which leads to a preference for operational measures over developmental initiatives.

**Table 3** Ranking of ways of meeting the environmental objectives of museums and galleries

Ways of meeting the objectives	Friedman test (Average ranking)	McNemar test	
		Ranking	P-value
Regular maintenance of the building	2.79	1.	-
Waste sorting	2.69	1.	0.832
Use of energy-saving equipment and renewable energy sources	2.29	2.	0.052
Use of recycled materials	2.25	2.	0.100

Source: own elaboration, 2025.

As with environmental objectives, the economic objectives of museums and galleries are secondary to social objectives, and the ways of achieving these objectives are diverse and primarily related to increasing revenues. Museums and galleries typically seek to secure sufficient financial resources by obtaining domestic subsidies and grants. However, museums under the jurisdiction of ministries other than the Ministry of Culture of the Slovak Republic face considerable disadvantages. This is due to the fact that, according to the Act of the National Assembly of the Slovak Republic No. 434/2010 Coll. on the provision of subsidies within the competence of the Ministry of Culture of the Slovak Republic, as amended, these museums are not eligible for subsidies from the Ministry of Culture's subsidy system. Presently, a total of 14 museums fall under the jurisdiction of other ministries.

Another way by which museums and galleries attempt to achieve their economic objectives, or ensure their economic needs, is by establishing an appropriate admission fee. The transition from no or minimum admission price, which was common in the past, to an adequately set price is particularly timely due to the urgent need to supplement public funds

with additional resources. This is also linked to another method of achieving economic objectives, which is the implementation of tourism support activities. While the development of internal resources is not the primary financial objective of museums and galleries, the augmentation of public resources through tourism-related activities is a rational strategy, given the current financial constraints and the escalating costs associated with enhancing storage and protection conditions for collections, enhancing exhibition and tour quality, and adequately compensating staff.

A mere 34% of the sample received sponsorship contributions, a figure that assumes particular significance when considered within the context of financing cultural attractions, particularly those related to foreign literature. This observation suggests that the sponsorship of museums and galleries in Slovakia is, as a general rule, underdeveloped.

Contrary to conventional economic objectives, which prioritize revenue augmentation, the utilization of volunteering and temporary employment seeks to curtail expenditures. This approach, which is especially pertinent during peak seasons, is employed by approximately one-third of the museums and galleries surveyed.

During the off-season, museums and galleries typically organize events to obtain supplementary resources. This strategy enables them to regulate visitor numbers in a manner that aligns with the capacity of exhibitions and displays.

A relatively underutilized strategy for achieving the economic objectives of museums and galleries is the pursuit of foreign grants. The intermittent acquisition of supplementary funding from foreign grant programs, predominantly from the European Structural Funds and the Kingdom of Norway, which museums and galleries in Slovakia scarcely acknowledge, could signify, on the one hand, the necessity for consultancy assistance in the formulation of applications. projects and, on the other hand, may be related to the purposefulness of their provision, which does not cover the operating costs of museums and galleries, but mainly to support projects related to the improvement of the structural and technical conditions of the buildings in which they are housed.

The McNemar test indicates that the predominant strategy employed by museums and galleries to attain their economic objectives is through the application for domestic subsidies and grants, the judicious pricing of admissions, and the undertaking of outreach initiatives within the tourism market. These findings confirm H4, indicating that museums and galleries are more oriented towards ways of increasing revenues than towards ways of reducing costs when achieving economic objectives (Tab. 4).

**Table 4** Ranking of ways of meeting the economic objectives of museums and galleries

Ways of meeting the objectives	Friedman test (Average ranking)	McNemar test	
		Ranking	P-value
Applying for domestic subsidies and grants	5.45	1.	-
Adequately priced admission	5.45	1.	1.000
Implementation of tourism promotion activities	5.37	1.	1.000
Organised events in the off-season	4.35	2.	0.007
Use of temporary work	4.12	2.	0.648
Applying for foreign grants	4.04	2.	1.000
Use of sponsorship	3.80	2.	0.678
Use of volunteering	3.41	2.	0.359

Source: own elaboration, 2025.

In the Slovak context, museums and galleries reduce costs where possible; however, due to their long-term underfunding and predominantly public character, these savings remain limited and do not significantly improve their financial situation, which reinforces their focus on increasing revenues. This also helps explain why the less frequently used approaches—such as volunteering, sponsorship, or foreign grants—do not differ significantly from each other, as they represent supplementary rather than structurally decisive sources of financial support (Tab. 4).

*Willingness of managers to enter the tourism market given the sustainable principles promoted.* The propensity of museum and gallery managers to participate in the tourism market is contingent upon the promotion of sustainable principles, which have become an integral component of cultural tourism development strategies. The survey results indicate that 50% of respondents regard the utilization of museums and galleries in tourism to be of considerable importance, 44% consider it to be important, 6% find it to be neither important nor unimportant, and 2% regard it as being absolutely unimportant. These results suggest that museum and gallery managers are progressively recognizing their role in sustainable tourism, with cultural institutions being regarded as an integral component of the tourism sector, encompassing environmental, social, and cultural dimensions. The inclination of managers to engage with the tourism market is, in turn, closely associated with their comprehension of the significance and potential advantages that tourism can offer, not only in terms of economic growth, but also in terms of preserving and promoting cultural heritage.

The present study sought to ascertain the perceived importance of museums and galleries in the tourism sector, as well as the benefits associated with their utilization. To this end, a systematic review of the extant literature was conducted, with the results organized by the Friedman ordinal test. The analysis revealed that the most commonly perceived benefit is the opportunity to disseminate cultural values to the public. Other benefits that were considered

by managers of Slovak museums and galleries include the opportunity to become more visible and to cooperate with other entities. The potential positive impact of tourism on the economy of museums and galleries, a notion that has been underscored by several authors (e.g., Piekkola, Soujanen, and Vainio, 2014; Vainio, 2023), is perceived by a smaller proportion of the managers surveyed (62%). The ranking of benefits generated by the McNemar test reveals that for the surveyed museum and gallery managers, tourism is a means to achieve social objectives (e.g., making the collection accessible to the public) rather than an opportunity to improve their economic situation (Tab. 5).

**Table 5** Benefits of tourism for museums and galleries

Benefits	Friedman test (Average ranking)	McNemar test	
		Ranking	P-value
Opportunity to disseminate cultural values to the public	3.13	1.	-
Opportunity to make oneself visible	2.57	2.	0.001
Involvement in cooperation with other entities	2.49	2.	0.804
Contribution to funding	1.81	3.	0.004

Source: own elaboration, 2025.

The potential benefits associated with increased use of museums and galleries in tourism should motivate managers to seek optimal levels of utilization. According to the survey results, 44% of museum and gallery managers assessed their current level of tourism engagement as inadequate. The management of these institutions identified two predominant perceptions of tourism use: adequate use (48.0%) and overuse (4.0%). However, in the remaining 4.0% of museums and galleries, managers were unable to assess the extent of their use in tourism in a relevant way.

Meanwhile, the majority (86.0%) of managers indicated a keen interest in increasing visitor numbers. A moderate relationship ( $p\text{-value} < \alpha$ ) was confirmed between the existing level of use of museums and galleries in tourism from the managers' perspective and guiding the number of visitors according to the Spearman's correlation coefficient value (Tab. 6).

**Table 6** Relationship between existing levels of museum and gallery use in tourism from the perspective of managers and visitor guidance

Statistics	Value
Spearman correlation coefficient	0.615
P-value	0.073
Number of responses	50

Source: own elaboration, 2025.

*Cooperation of museums and galleries with other entities in tourism.* In order to promote their activities in tourism, Slovak museums and galleries primarily engage in mutual cooperation, as indicated by the findings of Friedman's sequential test. This cooperation is predominantly associated with exhibition activities and the organization of the transnational event known as the 'Night of Museums and Galleries'. The legal framework for international collaboration among museums and galleries is primarily established through international agreements between states in the cultural sphere. Specifically, cross-border declarations of cooperation have been established between non-profit professional organizations of museums and galleries, with the objective of enhancing mutual information exchange and participation in partner activities, as well as promoting joint projects aligned with current needs. Representing museums and galleries in Slovakia are the Association of Museums in Slovakia, the Council of Galleries of the Slovak Republic, and the Slovak Committee of ICOM. They have concluded a Memorandum of Cooperation with museums and galleries in the Czech Republic, represented by the Association of Museums and Galleries of the Czech Republic, the Council of Galleries of the Czech Republic, and the Czech Committee of ICOM. However, as early as the 1990s, Silberberg (1994) had already concluded that mutual cooperation between museums and galleries would be inadequate.

In order to promote museums and galleries more effectively and to create more comprehensive tourism products for visitors, museums and galleries also cooperate with other tourism attractions, tourism management organizations operating in the region, local residents, intermediaries, and tourism facilities. According to Guyette (2013), it is the cooperation with other actors at the regional level that brings the most obvious effects to museums and galleries, and at the same time contributes to better economic results of tourism destination cities.

However, the results of the McNemar test indicate that, despite the potential positive benefits, the collaboration between museums and galleries and tourism establishments, tour operators and travel agencies is less intense (Tab. 7).

Table 7 Cooperation of museums and galleries in tourism

Cooperating entities	Friedman test (Average ranking)	McNemar test	
		Ranking	P-value
Other museums and galleries	4.30	1.	-
Other tourist attractions	4.18	1.	0.804
Tourism Management Organisation	3.86	1.	0.332
Local residents	3.18	2.	0.043
Tourism facilities	2.80	2.	0.238
Travel agents and travel agencies	2.68	2.	0.815

Source: own elaboration, 2025.

*Barriers to the use of museums and galleries in tourism.* According to museum and gallery managers, a significant barrier to the promotion of cultural activities in Slovakia is the lack of population interest in culture. This subjectivity is eliminated by the results of the European Commission's Special Barometer (2017), which aims to measure the value of cultural heritage. According to the Special Barometer, this problem is relevant for the European population in general. This phenomenon may be attributed to the substantial shifts in lifestyle that characterize the current generation, as posited by Čukan (2013). These changes in lifestyle, he contends, have led to a divergence in the course of childhood and socialization compared to previous generations. Consequently, many young people lack a comprehensive understanding of their own nation's history and culture. Museums and galleries, in this context, present a valuable opportunity to address these knowledge gaps and serve as a platform for personal realization.

The utilization of museums and galleries in tourism is impeded by several factors. Among these are the underdeveloped cooperation between relevant stakeholders, problematic financing of tourism activities, pricing policies, and managers' concerns about the negative effects of commercialization.

In light of the underdeveloped cooperation with entities interested in tourism development, several managers perceive reserves, particularly in establishing and developing relations with travel agencies and tour operators. These managers justify their perception of reserves by citing their passive approach to the promotion of domestic cultural tourism.

The problematic financing of museum and gallery activities in the tourism market, as well as the subsequent understaffing, are the result of their long-term unfavorable financial situation. This issue has been addressed in several analytical and strategic documents of the Ministry of Culture of the Slovak Republic. However, the persisting problems only serve to confirm the declarative nature of these documents.

The pressure on the growth of revenues from own activities, engendered by the challenging economic circumstances confronting museums and galleries, renders the judicious establishment of pricing policies increasingly imperative in the present context. This challenge is further compounded in the case of museums and galleries, given the prevailing conception of culture as a public good. The persistent conservative approach to the determination of admission prices for permanent exhibitions and displays is evident in the revenues of Slovak museums and galleries.

The managers' concerns regarding the adverse effects of commercialization are partially substantiated by the substandard conditions under which collection objects are stored and

protected, as outlined in the Comprehensive Report of the Ministry of Culture of the Slovak Republic on the analysis of the current state of registration, protection, and access to collections and expositions of museums and galleries in the Slovak Republic (2007) and the Strategy for the Development of Museums and Galleries in the Slovak Republic until 2018. However, examples of effective commercial activities in foreign museums and galleries demonstrate that such practices can be sustainable. According to Podušelová (2001), it is therefore important to avoid extremes in behavior. On the one hand, the apathy of managers to follow current trends can result in the isolation of museums and galleries and the loss of public interest. On the other hand, inappropriate commercialization can lead to their transformation into pseudo-cultural establishments. Kesner (2005) posits that these concerns can be addressed by augmenting the competencies of museum and gallery managers from cultural disciplines with qualifications from economic disciplines.

The results of McNemar's test indicate that there is no statistically significant difference between the first three barriers, thus confirming their status as the most substantial barriers to successful museum and gallery tourism activities (see Tab. 8).

**Table 8** Ranking of barriers to successful museum and gallery tourism activities

Barriers	Friedman test (Average ranking)	McNemar test	
		Ranking	P-value
Lack of interest of the population in culture	3.56	1.	-
Insufficiently developed cooperation of entities interested in tourism development	3.46	1.	0.839
Problematic financing of activities on the tourism market	3.21	1.	0.441
Pricing policy	2.56	2.	0.004
Concerns about the negative effects of commercialisation	2.21	3.	0.065

Source: own elaboration, 2025.

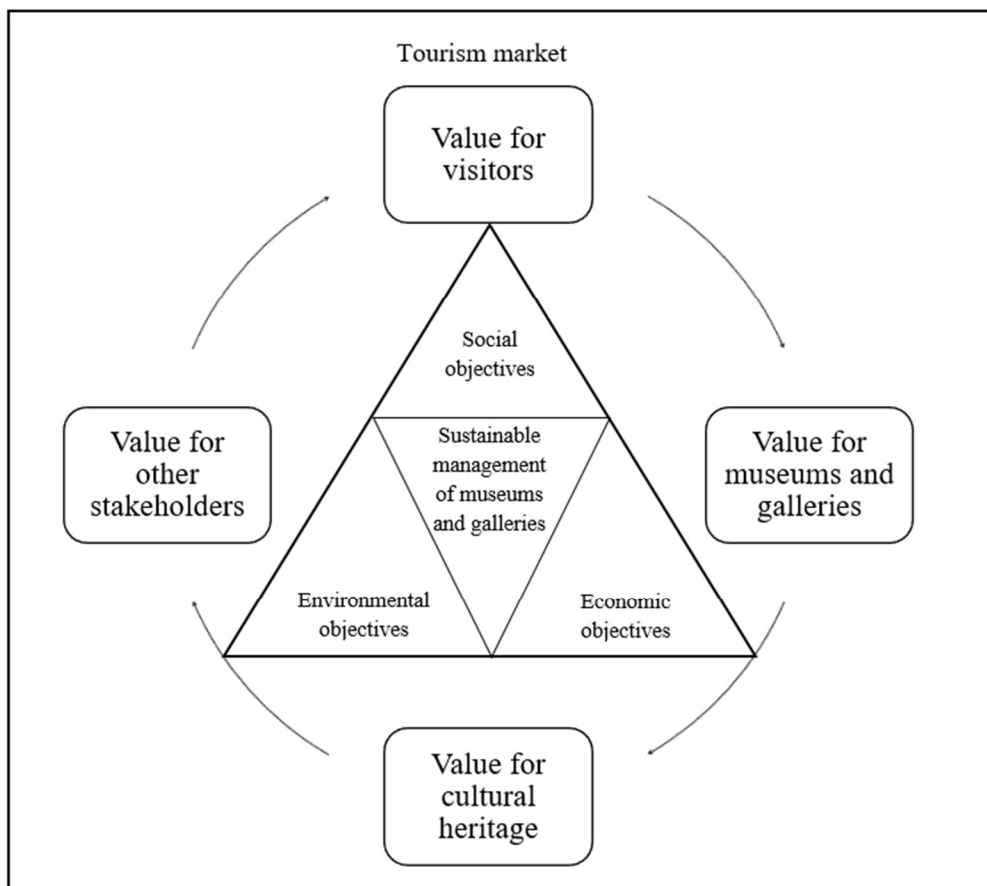
The elimination of the aforementioned barriers, apart from the efforts of museum and gallery managers, requires, above all, a more active approach and interventions from the responsible public administration authorities.

## DISCUSSION

The findings of this study suggest that the integration of museums and galleries into the tourism sector represents an important tool for their sustainable management, particularly in the Slovak context, where institutions face limitations in achieving environmental and economic objectives. The coordinated development of museum and gallery activities in tourism is therefore justified, as it can support not only the fulfilment of social objectives but

also contribute to the strengthening of environmental and economic sustainability. This approach promises multifaceted benefits, encompassing the creation of value for cultural heritage, museums and galleries, visitors, and other stakeholders (e.g., local residents, neighboring facilities and attractions in the destination, collaborating organizations, etc.). Pencarelli, Cerquetti, and Splendiani (2016) posit that a museum or gallery that effectively generates socio-cultural value for tourism visitors concurrently fosters economic value for itself, provided it possesses sufficient resources to safeguard tangible and intangible cultural heritage in the long term. Consequently, it can perpetually innovate its offerings, cater to the diverse needs of various target groups, and generate benefits for local communities (e.g., social cohesion, enhanced quality of life, and the development of economic and professional opportunities) (Fig. 1).

**Figure 1** Value creation from the use of museums and galleries in tourism



Source: Pencarelli, Cerquetti, Splendiani, 2016 and own elaboration, 2025.

The identified hierarchy of objectives of museums and galleries in Slovakia, with a clear prioritisation of social objectives, reflects not only their core mission but also their limited capacity to equally develop environmental and economic dimensions in practice. Similar

conclusions were reached by Pencarelli, Cerquetti, and Splendiani (2016), who examined the management of 61 museums in Italy in the context of sustainability, confirming that social objectives tend to dominate over environmental and economic ones. This alignment suggests that the prioritisation of social objectives is not specific to Slovakia but reflects a broader pattern in museum management.

A study by Vikmanem and Lake (2021) reveals considerable diversity in how the most popular museums in Latvia approach the Sustainable Development Objectives. The study's findings indicate that the aforementioned museums prioritize the following: (1) the preservation of heritage, efforts to strengthen national identity, and ICT sustainability within the context of cultural sustainability, (2) financial sustainability, as well as the multiplication of tourism and the development of an image in the context of economic sustainability, and (3) eco-cultural resilience and infrastructure improvement for enhanced energy efficiency, as well as the degree of progress towards environmental sustainability, emotional accessibility, and a focus on strengthening social capital in the context of social sustainability. This suggests that the balance between individual dimensions of sustainability may vary depending on institutional and national contexts.

Several of the ways in which museums and galleries are striving to achieve their objectives are linked to their use in tourism. The findings suggest that, in the Slovak context, tourism is predominantly perceived as a tool for fulfilling social objectives, while its role in achieving economic objectives remains less pronounced. This indicates that museums and galleries tend to prioritise their cultural and educational functions over revenue-generating activities.

The contributions of tourism to the sustainable management of museums and galleries are also examined by Culley (2010). Through her examination of 59 museums and galleries in Ontario, Culley concluded that tourism use does not harm their core functions, but rather contributes to their meaningfulness. This supports the findings of this study, as it confirms that tourism can strengthen the social role of museums and galleries without compromising their primary mission.

At the same time, the survey results indicate that museum and gallery managers with a broader range of complementary services generally concur that tourism marketing does not impose a financial burden on their budgets, thereby freeing up resources for their primary objectives. This suggests that the development of complementary services may represent an underutilised opportunity for improving the financial sustainability of museums and galleries in Slovakia.

The provision of complementary services is not regarded as controversial; rather, it is perceived as a pragmatic approach to ensuring the financial stability of their programs and

initiatives, as well as to supporting the infrastructure necessary for further tourism development at the destination. Consequently, the implementation of business strategies grounded in the paradigm of social entrepreneurship in tourism, with the objective of enhancing the value offered to visitors, as articulated by numerous scholars (e.g., Rentschler, 2001; Coman & Pop, 2012; Eid, 2016), holds particular pertinence within the context of Slovak museum and gallery management.

The findings of the study indicate the primary barriers to the utilization of museums and galleries in Slovakia's tourism sector, namely: (1) the population's inadequate interest in culture, (2) underdeveloped collaboration among stakeholders, and (3) the problematic financing of museums and galleries. These barriers suggest that the challenges faced by museums and galleries are not only internal but are also shaped by broader societal and systemic factors.

The absence of adequate public interest in cultural affairs is regarded by museum and gallery administrators in Slovakia as one of the most significant impediments to their activities in tourism. This finding is consistent with the European Commission's Special Barometer (2017), which indicates that this issue extends beyond the national context. This phenomenon, stemming from the contemporary consumerist way of life, is therefore not specific to Slovakia but also characterises the European population as a whole. The proportion of the population that does not visit cultural attractions due to a lack of interest in culture is approximately the same (29% in Slovakia and 31% in Europe).

However, although cultural tourism accounts for approximately 40% of global tourism (UNWTO), the findings suggest a mismatch between its potential and the actual use of museums and galleries in practice. From the perspective of John (2008), while the population shows interest in certain forms of culture, it rarely visits specific museums or galleries. This trend is further confirmed by the European Commission (2017), according to which up to 56% of the Slovak population did not visit a museum or gallery within a twelve-month period, and an additional 33% visited only once or twice.

According to Lin (2006), the most common reasons for the underrepresentation of museums and galleries include a lack of public interest, lack of time, unattractive exhibitions, a dull atmosphere, and problematic transport accessibility. These findings point to the need for a more proactive approach by museums and galleries towards visitors, particularly through enhancing the attractiveness of their offerings and improving communication. In this regard, the Association of Museums in Slovakia (2011) emphasises the need to strengthen promotion, increase visibility, and clearly define the role of museums and galleries within the cultural and educational space. John (2008) further highlights the importance of innovative marketing

strategies in addressing specific target groups, while Khalife (2007) recommends the systematic development of marketing departments and the active management of public relations.

The findings of the study indicate a necessity for enhanced collaboration among museum and gallery managers, tourism facility managers, and intermediaries in Slovakia. This suggests that the current level of cooperation remains insufficiently developed and may represent a structural weakness in the integration of museums and galleries into the tourism sector. These partnerships should therefore be purposefully cultivated through the active initiative of all involved actors, rather than arising spontaneously.

This situation may be explained by the traditionally fragmented nature of the cultural and tourism sectors in Slovakia, where cooperation between institutions is often limited and not systematically managed. In this regard, several countries (e.g., Croatia, Canada, South Korea) can serve as a source of inspiration, as Du Cros and McKercher (2015) argue that effective cooperation significantly contributes to the development of cultural tourism.

To enhance the utilization of museums and galleries in tourism, it is therefore necessary to place greater emphasis not only on cooperation within the tourism sector but also on collaboration with the creative industries, local communities, and municipalities. This is particularly important in the Slovak context, where museums and galleries often operate in isolation and do not fully exploit the potential of network-based approaches.

This argument is supported by the findings of the NEMO (2015) survey, which highlight the importance of collaboration with professionals from the creative industries, particularly in areas such as the preparation of permanent exhibitions, organisation of events, provision of animation services, production of souvenirs, development of mobile applications, use of museum spaces for filming, and the integration of museum content into advertising. These activities not only enhance the attractiveness of museums and galleries but also strengthen their position within the tourism market.

Another factor that limits the activities of museums and galleries in tourism in Slovakia is their problematic financing, which can be considered unsustainable in the long term. This finding suggests that the economic dimension of sustainability remains insufficiently developed in practice and represents one of the key constraints on their further development.

In contrast to the way Slovak museums and galleries are financed, which primarily depend on public funds, Bell (2012) presents a multi-source model of museum financing in the United States. Based on secondary data from the American Association of Museums, Bell (2012) argues that although most museums operate as non-profit institutions, public sources (federal, state, and local) account for only 24.4% of their revenues. The private and non-profit sectors

dominate, contributing 36.5% through donations from individuals, charitable organizations, philanthropic institutions, and corporate sponsors. A further 27.6% of income is generated from museums' own activities, such as exhibitions, events, retail sales (e.g., souvenirs, bookshops), hospitality services, and rentals. Admission fees, accounting for approximately 5% of total revenue, play a relatively minor role. The remaining 11.5% is derived from investments in financial instruments.

Compared to this model, Slovak museums and galleries are characterised by a high level of dependence on public funding, which limits their flexibility, innovation capacity, and ability to respond to changing conditions in the tourism market. This financing structure also reduces the pressure to diversify revenue sources and may lead to a more passive approach to exploiting market opportunities.

At the same time, it is important to emphasise that the possibilities for cost reduction in Slovak museums and galleries are highly limited, as these institutions already operate under constrained budgets and staffing capacities. This implies that further improvements in their economic sustainability cannot be achieved primarily through cost-cutting, but rather through the active development of new revenue streams and a more intensive integration into the tourism market.

Although Bell (2012) points out potential risks associated with multi-source financing, his conclusions align with those of Kesner (2005), who highlights the risks of excessive dependence on public funding, a pattern typical not only for Slovakia but also for most European countries. In this context, there is a clear need for a gradual transformation of the financial models of museums and galleries towards greater diversification of funding sources and enhanced economic autonomy.

## CONCLUSIONS

The results of the study confirm all four formulated hypotheses (H1–H4) and indicate that museums and galleries in Slovakia continue to prioritise social objectives, while environmental and economic dimensions remain less developed in practice. This imbalance reflects both the core mission of these institutions and the structural conditions under which they operate.

The findings highlight the need for a shift from predominantly mission-driven management towards more balanced and strategically oriented approaches that integrate social, environmental, and economic objectives. In practice, this implies strengthening the role of

tourism not only as a tool for fulfilling social functions, but also as a mechanism for improving economic sustainability.

Given the limited possibilities for further cost reduction, museums and galleries should focus primarily on the diversification of revenue sources, particularly through the development of complementary services, more active visitor engagement, and stronger integration into the tourism market. At the same time, greater emphasis should be placed on building partnerships with tourism stakeholders, the creative industries, and local communities in order to overcome the current fragmentation of the sector.

The findings also suggest that achieving environmental objectives requires a transition from predominantly operational measures towards more strategic and long-term initiatives, which are currently constrained by financial and organisational limitations.

In the Slovak context, the effective implementation of sustainability will depend not only on the internal efforts of museums and galleries, but also on external support mechanisms, particularly from public authorities. This includes the development of more flexible funding schemes, support for cross-sectoral cooperation, and the creation of policies that promote greater financial autonomy and innovation.

Overall, museums and galleries in Slovakia demonstrate a growing awareness of sustainability; however, their long-term development will depend on their ability to adapt to changing conditions in the tourism market and to adopt more proactive and economically resilient management approaches.

Despite its contributions, this study has several limitations that should be taken into account when interpreting the results. The research is based on a sample of Slovak museums and galleries, which may limit the generalisability of the findings to other national contexts. In addition, the data are based on self-reported responses of managers, which may reflect subjective perceptions rather than objective practices. Future research could focus on comparative studies across countries or include qualitative approaches to gain deeper insights into managerial decision-making.

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# MEASURING ETHICAL PERFORMANCE ACROSS NATIONS AND REGIONS: THE ETPI AND RETPI INDICES WITH A COMPARATIVE METHODOLOGY, CULTURAL DIMENSIONS AND RESILIENCE ANALYSIS

Alexander Shemetev<sup>a,b</sup>

<sup>a</sup> KREG Department, Prague University of Economics and Business, Email: [aleksandr.shemetev@vse.cz](mailto:aleksandr.shemetev@vse.cz)

<sup>b</sup> Faculty of Social and Economic Studies Department, Jan Evangelista Purkyně, Ústí nad Labem

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## Abstract

This paper presents the third generation of the Ethics Perception Index (ETPI) and the Regional Ethics Perception Index (RETPI), which are used as quantitative tools to measure ethical and moral development at national and sub-national levels. Based on earlier conceptual versions, the present study introduces a transparent methodology integrating seven standardised components — corruption, economic freedom, human development, education, human rights, environmental performance and natural resource depletion — rescaled to a 0–100 scale with explicit treatment of negative indicators. The study employs a dynamic framework including time-series analysis, missing-data protocols and regional modifiers based on public engagement (e.g. Google Trends). This enables the indices to capture resilience and recovery potential following shocks. When this methodology is applied to global and regional datasets, the results confirm that Scandinavian countries consistently achieve the highest ETPI values, thus validating the framework against established perceptions of ethical leadership. The RETPI further reveals significant intra-national variation, highlighting regions that diverge from national averages and demonstrating the added value of sub-national analysis. This study contributes to existing knowledge by providing the first replicable ethics-focused indices that are longitudinal and regionally adaptable. These indices complement existing measures such as the Social Progress Index and the Human Development Index. These findings provide policymakers and researchers with a robust tool for assessing the ethical underpinnings of resilience, sustainability and inclusive development.

**Keywords:** Ethics Perception Index, ETPI, Regional Ethics Perception Index, RETPI, moral-ethical growth, sustainable development, quantitative ethical assessment, political decision-making.

## INTRODUCTION

In an era where economic growth frequently takes precedence over other aspects of social development, the need for a more nuanced understanding of progress is becoming increasingly urgent. Joseph E. Stiglitz's seminal 2005 essay, 'The Ethical Economist: Growth May Be Everything, But It's Not the Only Thing', catalysed a critical reassessment of conventional measures of development. Stiglitz's work emphasises the shortcomings of

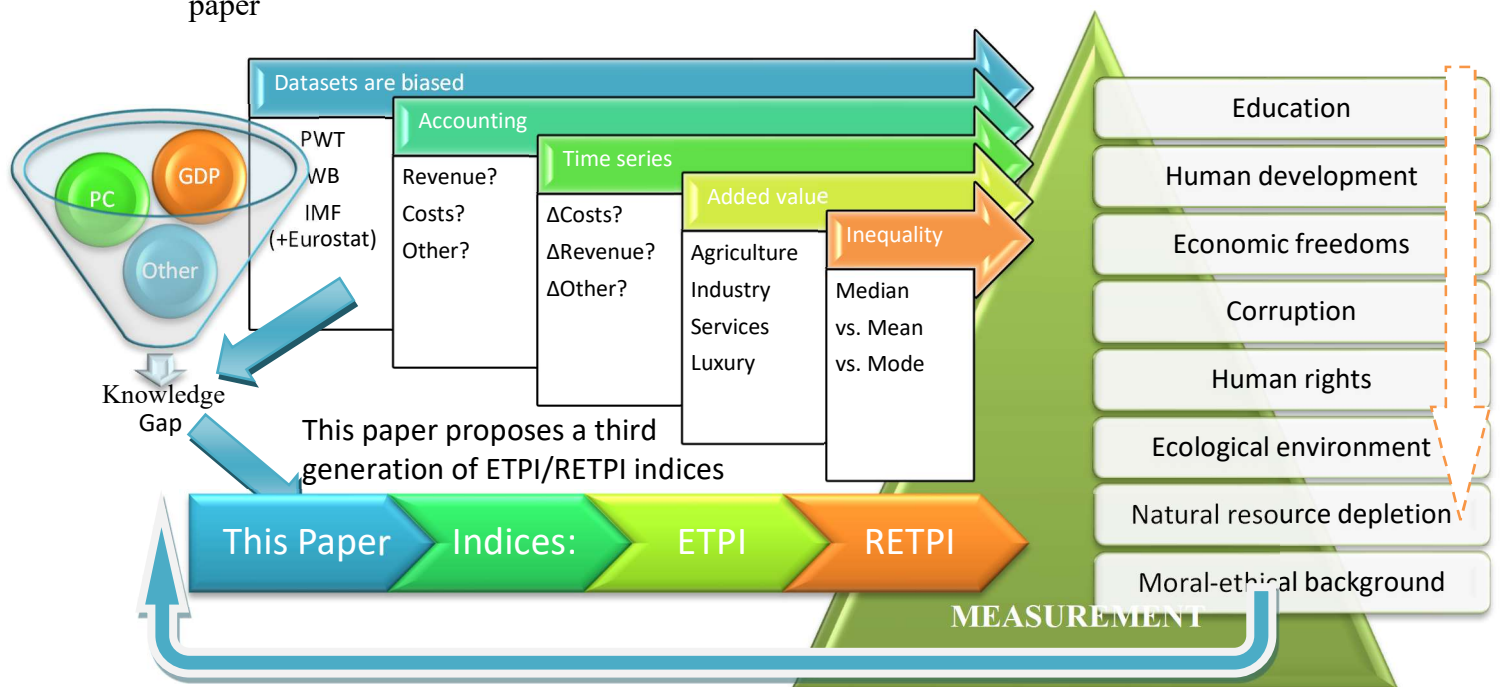
traditional methods that prioritise material well-being over the moral and ethical dimensions that are vital for sustainable development (Stiglitz, 2005).

His subsequent involvement in the Stiglitz-Sen-Fitoussi Commissions at the OECD reinforced the idea that policymakers have been misled by their over-reliance on Gross Domestic Product (GDP) as the primary measure of progress, obscuring issues such as inequality, environmental degradation and social well-being (Stiglitz et al., 2010, 2018).

These and other limitations of GDP are now well documented. For instance, GDP fails to account for income distribution, non-market activities or the depletion of natural resources (Shemetev, 2025; van den Bergh, 2009). Furthermore, it fails to capture the ethical and moral dimensions of development (Giannetti et al., 2015; Shemetev, 2025). Consequently, countries may appear to be prospering economically while simultaneously experiencing rising inequality, corruption or ecological collapse (Dědeček & Dudzich, 2022).

Alongside these critiques, the emerging field of development ethics has argued that progress should be evaluated in terms of both material output and values such as equity, human rights, empowerment and environmental sustainability (Drydyk, 2016). One of the founders of development ethics, Denis Goulet, already stressed that 'anti-development' occurs when growth undermines dignity, justice, or sustainability (Goulet, 1971). However, despite decades of debate, there is still a lack of robust quantitative indices that can systematically measure ethical progress across countries and regions (see Fig. 1).

**Figure 1** Current state of knowledge of traditional economic metrics and the approach of this paper



Source: Own processing. For more information, see e.g. Shemetev (2022)

Moreover, recent global challenges, from the 2008 financial crisis to the ongoing military conflicts and the ongoing pandemic, have further exposed the vulnerabilities of growth models that ignore ethical and moral foundations. These events highlight the importance of frameworks that consider both economic and ethical aspects of progress.

In response to these challenges, recent scholarship has begun to explore whether ethical behaviour and governance quality directly impact sustainable development outcomes (Dermody et al., 2018; Johnson, 2013; Seiam & Salman, 2024; Wang et al., 2023). However, existing indices such as the Corruption Perceptions Index (Bevir & Letki, 2012; Heide, 2020) and the Dow Jones Sustainability Index (Carlos & Lewis, 2018; Johnson, 2013) remain partial and sector-specific, or focus too heavily on governance and finance. This leaves a gap in the area of comprehensive, multidimensional ethical assessment.

Therefore, the need for ethical considerations in development is not merely theoretical; it has practical implications for policymaking at local, regional, and national levels. Economic development usually progresses from the local to the regional, and then to the national and international levels. However, current policy frameworks often overlook this progression because they lack the tools to measure development simultaneously at these different levels (Sen, 2000; Sen & Nussbaum, 1993; Shemetev & Pěluha, 2023).

Against this backdrop, the present study aims to further the debate by proposing a third generation of indices (see the 'Discussion' section, subchapter 'From Concept to Maturity: Three Generations of the Ethics Perception Indices' for details of the differences between the three generations of these indices). The study focuses on the third generation of the two indices: the Ethics Perception Index (ETPI) and the Regional Ethics Perception Index (RETPI). These indices seek to incorporate ethical considerations into development assessments systematically, transparently and adaptably. By doing so, they address the urgent need for tools that can capture the ethical foundations of resilience and sustainability in the twenty-first century.

## **THEORETICAL BACKGROUND: INTEGRATING STIGLITZ'S CRITIQUE AND INDICES FOR HOLISTIC MEASUREMENT OF MORAL-ETHICAL GROWTH**

### **The critique of GDP as a singular measure of progress**

#### *Historical development of GDP*

GDP and related indicators have their roots in the work of Simon Kuznets, who developed them as a measure to assess the economic performance of nations (Kuznets, 1934, 1941, 1955). Over time, GDP has become the most widely used indicator of economic health, providing insight into a country's economic size and performance (Landefeld, 2000; Neil &

U.S. Bureau of Economic Analysis, 2020). Despite its widespread use, GDP has come under considerable criticism for its inability to capture the full extent of societal progress (van den Bergh, 2009).

#### *Limitations of GDP and related indicators*

Bergh (2009), Shemetev & Pélucha (2023), Stiglitz (2005) and several other authors highlight several critical limitations of GDP and related indicators. First, it does not take into account the distribution of income, which means that GDP growth can coexist with increasing inequality. Second, GDP does not take into account the environmental degradation and resource depletion that often accompany economic growth. Third, GDP does not measure non-market activities, such as household work and voluntary work, which are essential for social well-being. Finally, GDP overlooks the moral and ethical dimensions of progress, which are crucial for a holistic understanding of societal progress.

### **Broadening the scope: Introducing new moral-ethical growth indices**

#### *Introduction to Ethical Indicators*

Ethical norms play a fundamental role in shaping the social, cultural, economic and political landscapes of societies (Ariely, 2012; Bauman, 2008; Gotoh & Dumouchel, 2009; Sen, 2004; Shemetev, 2022; Stiglitz, 2005). The complexity and variability of ethics across regions, countries and societies requires a nuanced understanding of how ethical norms are formed and measured (Bauman, 2007; Burnham & Phelan, 2001; Douglas & Isherwood, 1996a; Hickel, 2020; Wengrow, 2010). Historically, ethics has been viewed as a culturally embedded phenomenon, with each society developing its moral compass based on historical, religious, and social factors (Douglas & Isherwood, 1996b; Graeber, 2011; Harari, 2015; Harreld, 2016; Maddison, 2007; Narotzky, 1997; Shapiro, 2020; Wengrow, 2010). However, with the advent of globalisation, there is a growing need for comprehensive ethical indicators that can be applied at different levels – regional, national and local – to assess sustainable well-being.

This theoretical background explores the roots of ethical norms, the role of education in shaping ethics, and the potential for creating comprehensive ethical indices. By integrating previous research on the components of ethics and the methods for measuring them, this study aims to propose a novel approach to ethical indexing that is both quantitative and applicable across different socio-cultural contexts.

#### **The roots of ethics**

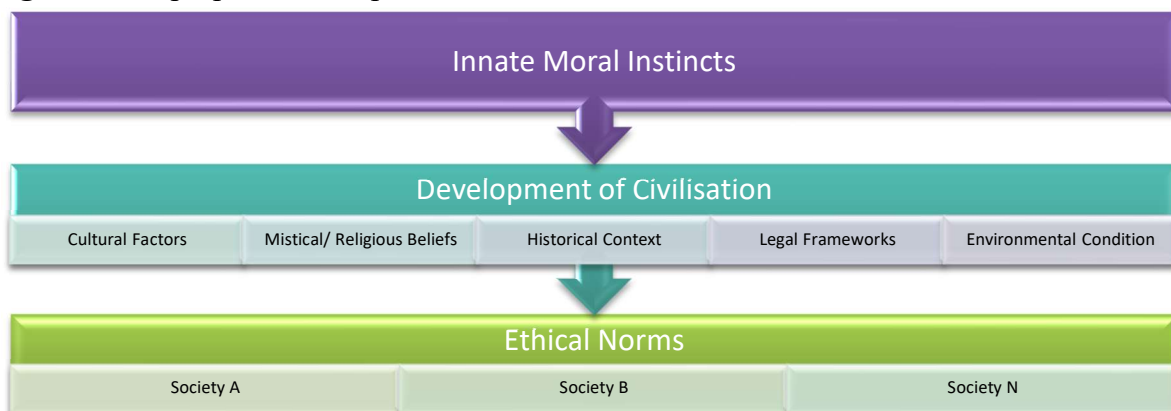
Ethics is not a monolithic concept, but a dynamic process shaped by various factors, including culture, religion and historical context (Broadie, 1994; Haeffele & Storr, 2019; Hauptman, 2019; Lord, 2010; White, 2019). Different societies may have different views of what constitutes ethical behaviour (Boucher, 2009; Carrier, 2005; Harari, 2014; Hauptman, 2019;

Hayek & Bartley, III, 1992; Sherwin, 2000). For example, while some indigenous tribes may view cannibalism as a virtuous act (see, for example, study of Keeley (1997)), other societies may condemn it as highly unethical (see, for example, the work of Kennedy (2007)). This divergence highlights the importance of understanding the roots of ethics within each region, country or society.

Ethical norms are often shaped by a combination of innate moral instincts (Bloom & Cook, 2013) and external influences such as education, religion and law (see, for example, Keeley's concept of civilisation (1997) or the collection of studies on ethics in White (ed.) (2019)). The concept of ethics as an innate understanding of 'right' and 'wrong' has been supported by psychological studies suggesting that even infants have a rudimentary sense of morality (Bloom, 2013). However, these innate tendencies are further shaped by societal influences, leading to the development of collective ethical standards through the process of civilisation (Keeley, 1997).

Fig. 2 conceptualises the sources of ethics as a stochastic process in which innate moral instincts are shaped and refined by external factors over time. This process results in a wide range of ethical norms, as seen in the different practices and beliefs of different societies.

**Figure 2** The proposed concept of the sources of ethics



Source: Own processing. For more information, see e.g. Shemetev (2022)

This diagram (Fig. 2) illustrates how various external factors, such as cultural factors, religious beliefs, historical context, legal framework and environmental conditions, interact with innate moral instincts. These interactions lead to the development of ethical norms that vary from society to society.

#### *The role of education in shaping ethics*

Education plays a crucial role in filtering and refining ethical standards within a society (Halstead & Taylor, 2000; Nucci, 2003; Rest et al., 2014). It serves as a mechanism for selecting 'good' and 'bad' practices, thereby shaping collective ethical consciousness (Arthur, 2003; Lapsley & Narvaez, 2005, 2004; Smiles, 1862). The globalisation of education has the

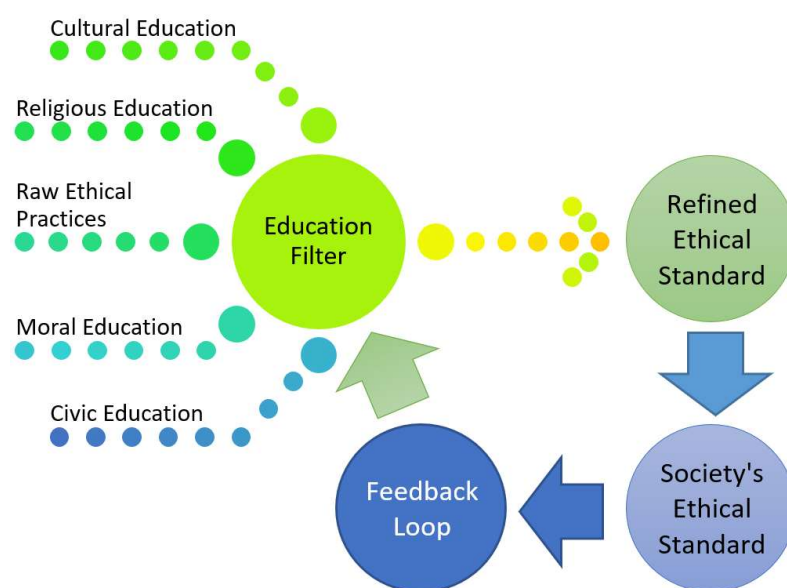
potential to create a globalised filter for ethical standards, promoting universally accepted norms while discouraging practices deemed unethical by the wider global community (Power, 2015).

Throughout history, education has played a central role in challenging and transforming societal norms (Arthur, 2003). For example, the abolition of slavery in nations such as Russia (Troinitsky, 1858) or the United States (Kennedy, 2007) was significantly influenced by the dissemination of new educational philosophies and ethical frameworks.

Xenophon's *Cyropedia* (c. 370 BC), a foundational European encyclopaedia, provides an example from history of how education can influence societal values. Cyrus, who received an excellent education for his time, embraced moral and political philosophy, and as a result freed some slaves, demonstrating the power of education to foster empathy and challenge entrenched social practices (Xenophon, 2011, Volume #1, Book 1-4, pp. 361-364; Volume #2, p. 9 ("...slavery is a great evil.") and pp.148-150 (People who treat others as slaves deserve nothing and often lose everything ["...because they preferred to treat (people) like slaves rather than as friends. Many, too, not satisfied to live contentedly in the enjoyment of their own proper share, have lost even that which they had, because they have desired to be lords of everything; and many, when they have gained the much coveted wealth, have been ruined by it." [p.149]))).

Fig. 3 illustrates the role of education as a filter that selects and promotes ethical practices, reinforcing the idea that education is a fundamental element in the development of a society's ethical standards.

**Figure 3** The Role of Education in Shaping Ethical Standards



Source: Own processing. For more information, see e.g. Shemetev (2022)

Fig. 3 highlights the central role of education as a filtering mechanism that refines raw ethical practices (see, for example, the study of Macintyre (2007)). Various forms of education (moral, civic, cultural and religious) contribute to the formation of refined ethical standards, which in turn shape a society's ethical norms. A feedback loop from societal ethical norms helps to continually inform and adjust the educational filter.

### **The need for ethical indices**

Despite the centrality of ethics to societal development (Foot et al., 1967; Habermas, 1987; Macintyre, 2007; Nussbaum, 2011; Rawls, 2005; Sen, 2000, 2013; Stiglitz, 2005), there is still no comprehensive index that systematically integrates ethical dimensions across economic, social, and environmental domains. Several indices exist, but each remains partial in scope. For example, the Corruption Perceptions Index (CPI) (Transparency International, 2020) measures perceived corruption but neglects broader ethical dimensions such as equity or sustainability. The Human Development Index (HDI) (United Nations Development Programme, 2025) incorporates health, education, and income but omits governance quality, corruption, and environmental stewardship. The Environmental Performance Index (EPI) (Conrad & Cassar, 2019; Wolf et al., 2022) focuses on ecological outcomes but does not address justice or human rights. Similarly, the Dow Jones Sustainability Index (DJSI) (Carlos & Lewis, 2018; Johnson, 2013) and the Standard Ethics Indices (Standard Ethics, 2021, 2024a) are primarily designed for corporate or financial benchmarking rather than holistic societal assessment.

These indices demonstrate that while important dimensions of ethics are being measured, they remain fragmented, sector-specific, or oriented toward corporate governance rather than societal ethics. No existing framework combines corruption, human rights, education, environmental sustainability, and economic freedom into a single, transparent, and reproducible measure. Moreover, none of the existing indices provide a **regional-level tool** that can capture intra-national variation in ethical development, despite evidence that ethical challenges often differ significantly across regions (Shemetev, 2022; Shemetev & Pěluha, 2023).

This fragmentation constitutes the research gap: the absence of a unified, multi-dimensional, and regionally adaptable index of ethical progress. To address this, the present study introduces the third generation of the Ethics Perception Index (ETPI) and the Regional Ethics Perception Index (RETPI). These indices integrate seven established components (CPI, HDI, EPI, EFI, HRI, NRD, EI) into a single framework, while also incorporating dynamic methods for handling missing data and regional modifiers. In doing so, ETPI and RETPI

provide the first comprehensive, scalable, and policy-relevant instruments for measuring ethical development at both national and regional levels.

*Proposed ethical index: ETPI+RETPI*

The development of these indices is based on the premise that ethics is a multifaceted phenomenon that cannot be fully captured by existing financial or freedom-based indices. Instead, ETPI and RETPI seek to provide a more holistic assessment of ethical standards, taking into account the various factors that influence ethics in different societies.

*The Ethics Perception Index (ETPI)*

The Ethics Perception Index (ETPI) is designed to provide a quantitative measure of moral-ethical growth at the national level. The ETPI includes indicators related to justice, equality, environmental protection and general ethical behaviour (see Tab. 1).

**Table 1** The Designed ME-Matrix Principle to Process the Evaluation of the Missing Data

Existing Macro Indicator (or set of indicators)	Limitation of Using the Indicator Individually or as a Traditional Metric	Key Benefit of ETPI/RETPI Integration in Comparison
<b>GDP / GRP and similar indicators</b>	Fail to capture the <b>complexity of human development</b> , overlooking the moral and ethical dimensions crucial for a holistic understanding of societal progress. <b>Lack granularity</b> for micro-regional/rural analysis (below NUTS III).	<b>Holistic Measurement of Progress:</b> Offers an <b>alternative/supplementary tool</b> that integrates ethical considerations, justice, equity, and environmental sustainability, ensuring progress is measured beyond economic output.
<b>Individual Proxy Indicators (CPI, HDI, EPI, EFI, HRI, NRD, EI)</b>	Each measures <b>only one facet of ethics</b> (e.g., corruption or education). Using them separately can lead to <b>biased estimators</b> in research, as ethical issues are intertwined.	<b>Unified Ethical Assessment:</b> Synthesizes these <b>seven diverse components</b> (covering corruption, human development, education, human rights, economic freedom, and environmental ethics) into a single, reliable measure of moral-ethical growth.
<b>Individual Proxy Indicators (Data Frequency)</b>	Many key components (like HRI, EFI, NRD) have <b>low update frequencies</b> , posing a challenge for effective time-series analysis.	<b>Dynamic &amp; Longitudinal Utility:</b> ETPI (the third generation presented in this paper) provides a dynamic methodology for <b>time-series analysis</b> . It also incorporates <b>data management tools</b> (like the ME-Matrix and interpolation) to handle missing and low-frequency data, enhancing its utility for longitudinal studies.
<b>Existing Economic/Resilience Models</b>	Classic regional recovery models primarily capture <b>employment trends</b> (Giannakis & Bruggeman, 2020) but fail to explicitly incorporate moral-ethical dimensions.	<b>Measures Ethical Resilience/Recovery Potential:</b> ETPI provides the only known quantitative method to estimate the <b>moral-ethical economic potential</b> of recovery and resilience. Moral-ethical growth creates a <b>long-term stable basis</b> for recovery, unlike unstable economic indicators.

Source: Own work.

By systematically assessing these dimensions, the ETPI provides a comprehensive framework for assessing societal progress beyond traditional economic measures.

*The Regional Ethics Perception Index (RETPI)*

The Regional Ethics Perception Index (RETPI) extends the principles of the ETPI to a more localised context. By focusing on regional differences, the RETPI allows for a more nuanced understanding of moral-ethical growth in different areas of a country. This localised approach is particularly valuable for identifying regions that may be lagging behind in ethical development, despite overall national progress.

**METHODOLOGY**

**Math model**

The ETPI index has 7 measurable components:

- ✓ economic freedom (measured by the Economic Freedom Index),
- ✓ patterns of corruption (measured by the Corruption Perception Index),
- ✓ level of human development (measured by the Human Development Index),
- ✓ level of skills and education (measured by the Education Index),
- ✓ maintenance of a sustainable ecology (measured by the Environmental Performance Index)
- ✓ Level of human rights development and protection (measured by the Human Rights Index)
- ✓ preservation of natural resources for future generations (measured by the depletion of natural resources as a percentage of GDP).

Let components C be scaled either positively or negatively by their original methods. Positive scaling means that higher values of the ETPI components (C) lead to a better situation in a particular area of ethics. The positively scaled components for the ETPI Index are:

- ✓ Economic Freedom Index
- ✓ Corruption Perception Index
- ✓ Human Development Index
- ✓ Education Index
- ✓ Environmental Performance Index
- ✓ Human Rights Index

So that:

$$C_{it} = \left( \frac{X_{it}}{\max(X)} \right) \times 100 \tag{1}$$

Notes: Own formula. C: A specific positive-scale component used to estimate the ETPI (Index Generation III, for time series analysis). X: One of the positive-scale components used to measure ethics. These are: Economic Freedom Index, Corruption Perception Index, Human Development Index, Education Index and Environmental

Performance Index; max: the maximum value taken for all countries or territories and all time periods in the time series analysis; i: a specific country or territory; t: time.

Conversely, negative scale components are possible. Methodologically, a negative scale means that higher values of an ETPI component (C) lead to a worse overall ethical situation. ETPI has only one negative scale component – natural resource depletion as a percentage of GDP.

$$NRD_{it}^R = 100 - \left( \frac{NRD_{it} - \min(NRD)}{\max(NRD) - \min(NRD)} \right) \times 100 \quad (2)$$

Notes: Own formula. NRD: natural resource depletion. i: specific country or territory. t: time. R: rescaled. min: minimum value (taken for all countries or territories and all time periods in the time series analysis). max: maximum value (taken for all countries or territories and all time periods in the time series analysis).

There is a conceptual distinction between the two levels of this framework. At the national level, the ETPI acts as an Ethical-Institutional Performance Index, aggregating standardised global indicators in order to measure a nation's institutional stock and objective conditions. Conversely, the RETPI functions as a perception index, incorporating the regional modifier (E) to shift the focus from structural institutional data to real-time ethical engagement and public perceptions within a specific territory.

### Dealing with missing data between periods

However, previous generations of the ETPI index were designed for the static analysis of ethics. In other words, they allow for the comparison of countries within a given year, but limit time series analysis. This paper presents the third generation of the ETPI index, which can be used to estimate time series and track changes in ethics over time in different countries. Let  $C_{it}$  be the value of the positive scale component  $i$  within a time  $t$ . Some values (less than 3% of the total number of observations) can have missing values for certain dates in between. The linear interpolation method allows these values to be filled in, thus improving the ETPI index once the missing values appear:

$$C_{it} = C_{it_0} + \frac{C_{it_1} - C_{it_0}}{t_1 - t_0} \times (t_j - t_0) \quad (3)$$

Notes: Own formula. C: Components of the ETPI. i: Specific country or territory. j: Current time with unavailable data (at the time of index estimation). 1: Final period. 0: Base period. t: Time.

For example, suppose country  $N$  has an economic freedom index available for 1990 of 100 and for 2000 of 200, with currently missing data in between. Then:

$$C_{N1991} = 100 + \frac{200 - 100}{2000 - 1990} \times (1991 - 1990) = 110$$

$$C_{N1992} = 100 + \frac{200 - 100}{2000 - 1990} \times (1992 - 1990) = 120$$

And similarly for other years (1993-1999). As soon as the economic freedom index data for country  $N$  for the years in between (1991-1999) become available, they should replace these interpolated values and thus adjust the estimation of the ETPI. A similar process occurs with the estimation of other key social and economic indicators, such as GDP, where data revisions are common within the further half-decade period, potentially correcting the value of GDP for country  $X$  for time  $t$ .

**Handling temporary unavailability of data in recent periods**

Given a data set  $D$  with a set of countries  $\{I_1, I_2, I_3, \dots, I_n\}$ , a set of years  $\{y_1, y_2, y_3, \dots, y_n\}$  and a set of input components of the ETPI index  $\{C_1, C_2, C_3, \dots, C_n\}$ , where  $D_{IYj}$  represents the value of the variable  $C_j$  for country  $I$  in year  $y$ . Let  $Y_I$  be an ordered set of years for which data exist for country  $I$ , so that  $Y_I = \{y_1, y_2, \dots, y_k\}$ . For each country  $I$  it is possible that the last value(s)  $[LV_{Ij}]$  of the variable  $C_j$  may be missing, which is often observed in the datasets. The following iterative algorithm can solve this problem. For each variable  $C_j$  for each country  $I$ , where  $LV_{Ij}$  is a missing value (NA) for each year  $y \in Y_I$  (in ascending order):

$$D_{I,y,j} = \begin{cases} D_{I,y,j} \rightarrow \text{if } D_{I,y,j} \neq NA \\ LV_{I,j} \rightarrow \text{if } D_{I,y,j} = NA \cap LV_{I,j} = NA \\ NA \rightarrow \text{if } D_{I,y,j} = NA \cap LV_{I,j} \neq NA \end{cases} \quad (4)$$

Source: The author's work.

Thus, this algorithm updates the  $LV_{Ij}$  after each year iteration if (see Fig. 4).

**Figure 4** Process of imputation of missing values for recent data



Notes: Own elaboration.

It is worth noting that as soon as the most recent values of the  $C_j$  become available, – we update the values of the  $D_{IYj}$ , which consequently updates the ETPI itself.

This is a similar methodological approach to the estimation of macroeconomic indicators, where even such popular components as GDP can be updated within half a decade of the original publication of the estimate.

### **Rules for missing data handling:**

1) Acceptable gaps:

- ✓ Short gaps of one to three consecutive years are routinely interpolated using linear interpolation.
- ✓ Medium-sized gaps of up to five years may also be interpolated, but the results are flagged as provisional.
- ✓ Gaps of 10 years or more are treated with caution: interpolation is possible, but the resulting values are marked as estimates with limited reliability for interpretation.

2) Interpolation method:

- ✓ When data are available at two points (e.g. 2020 and 2025), missing years are filled using linear interpolation.
- ✓ Once intermediate data points become available (e.g. 2023), the series is recalculated in segments (e.g. 2020–2023, 2023–2025) to ensure continuous improvement in accuracy.

3) Substitutability of indicators:

- ✓ The indices are designed in a modular 'LEGO-style'. If one component is missing, a comparable indicator can be used instead (for example, the Our World in Data human rights index could be replaced with the Fariss et al. (2020) human rights index, which has been rescaled to 0–100).

Notes: Each component index can be replaced by an equivalent theoretical and comparable empirical proxy. However, this substitution must be formally documented by future users to maintain replication integrity. This ensures that the modular architecture remains fit for purpose and can be reproduced for high-impact longitudinal studies.

- ✓ The core demand is for consistency within each analysis. In other words, if a substitute index is chosen, it should be implemented for all countries and all time periods to avoid potential bias.
- ✓ If Google Trends are unavailable, RETPI's regional engagement component can be derived from alternative digital sources (e.g. social media data).

4) Limitations:

- ✓ Long gaps reduce the reliability of trend analysis and resilience/recovery estimates.

- ✓ Results for countries with persistent data scarcity should be interpreted as indicative rather than definitive.
- ✓ All interpolated or substituted values are transparently documented, and outputs are updated whenever new data become available.

**Modelling the Regional Ethics Perception Index (RETPI): Conceptual Framework and Analysis**

Let  $E$  represent the Ethical Engagement, as measured by online activity ( $E \in [0,1]$ ).  $T$  denotes the ETPI (Ethics Perception Index) for a specific country ( $T \in [0,1]$ ).  $L$  and  $H$  represent the lower and upper bounds, respectively, of the modifiers applied to  $T$  ( $L, H \in [0,1]$ ). The RETPI (Regional Ethics Perception Index) is then defined by the following function (5):

$$RETPI^U = \begin{cases} T & \text{if } E = 0.5 \\ (1-L)T & \text{if } E = 0 \\ (1-L)T + \left(\frac{E}{0.5}\right)(TL) & \text{if } E \in (0; 0.5) \\ (1+H)T & \text{if } E = 1 \\ T + \left(\frac{E-0.5}{0.5}\right)(TH) & \text{if } E \in (0.5; 1) \end{cases}$$

Notes: Own formula. T: ETPI (Ethics Perception Index) value ( $T \in [0;1]$ ); L: Lower bound ( $L \in [0;1]$ );

H: Higher bound ( $H \in [0;1]$ ); E: Interest in ethical questions, as measured by internet activity;  $E \in [0;1]$ ;

$RETPI^U$ : Unscaled Regional Ethics Perception Index.

So that:

$$RETPI = 100 \left( \frac{RETPI^U_{E,T}}{\max(RETPI^U)} \right) \tag{6}$$

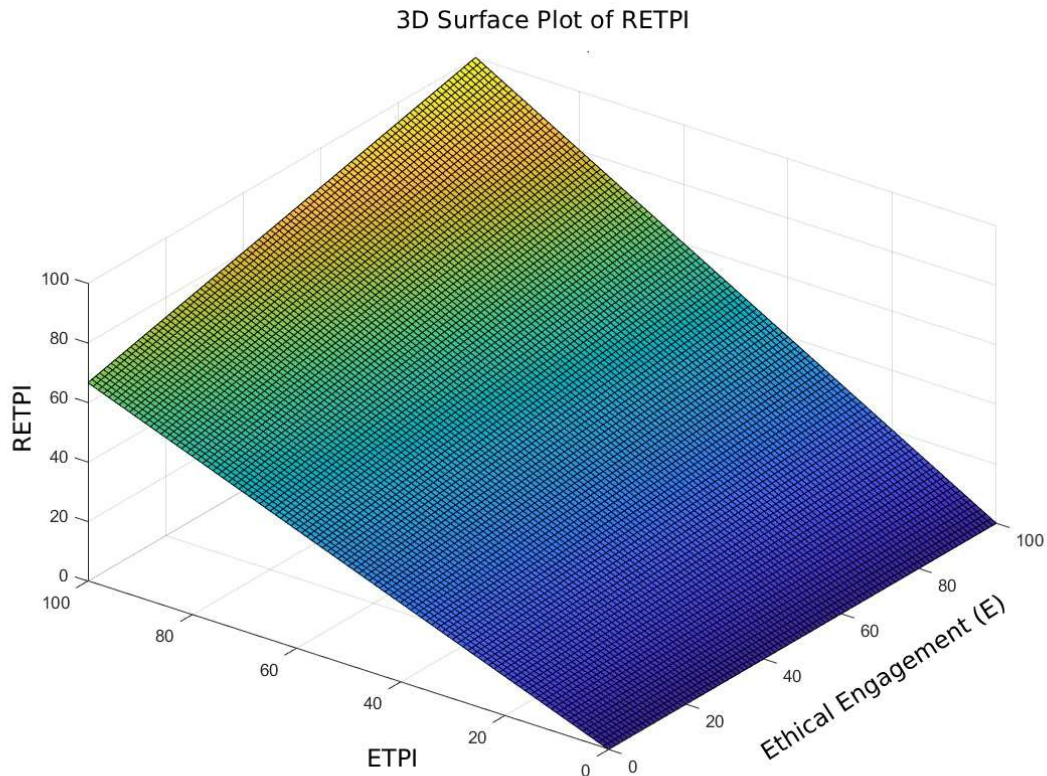
Notes: Own work. RETPI: Scaled [from 0 to 100] Regional Ethics Perception Index;

$\max(RETPI^U)$ : the maximum value of the Unscaled Regional Ethics Perception Index;

100 – multiplier to shift the scale of the RETPI index to values between 0 and 100.

**Analysis**

Fig. 5 illustrates the range of  $RETPI^U$  values under the conditions set for this study, where  $H=L=0.2$ .

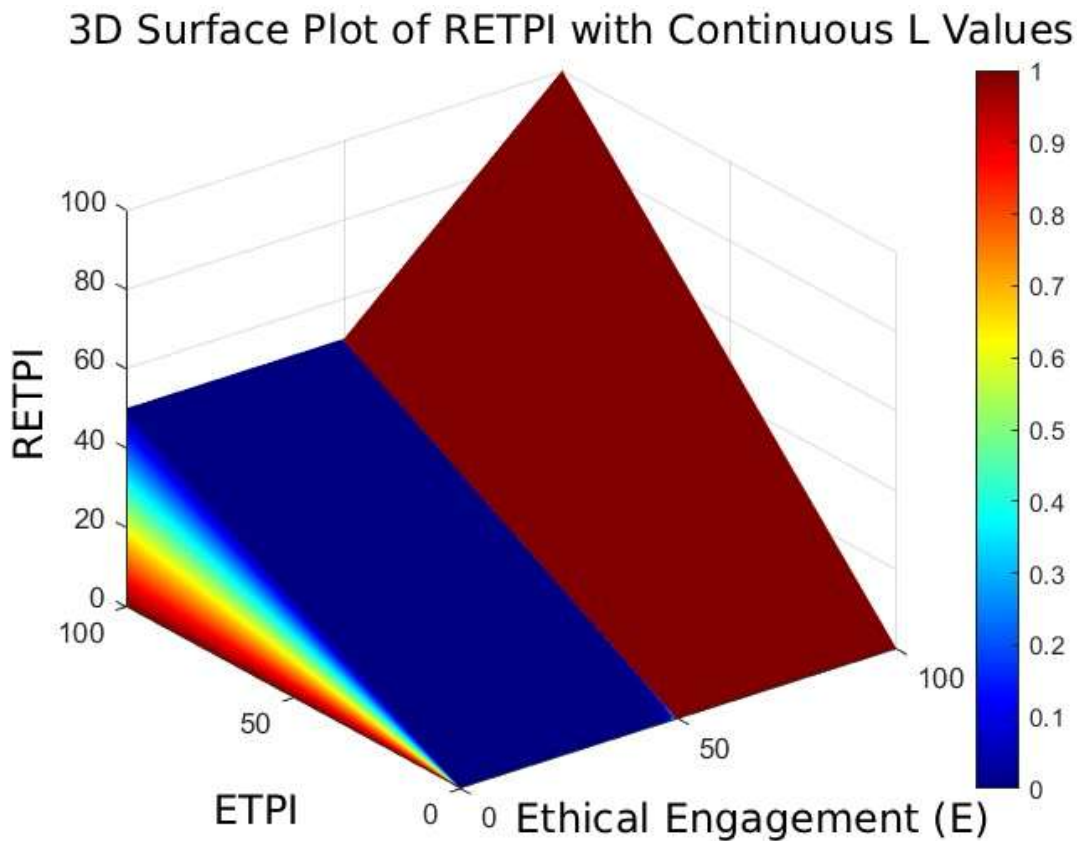
**Figure 5** RETPI values modulation when  $H=L=0.2$ 

Notes: Own elaboration in MatLab 2022.

It is evident from Fig. 5 that the maximum value of this function is achieved by maximising both ETPI (which reflects a nation's commitment to ethics, including anti-corruption efforts, human development, and ecological sustainability) and "Ethical Engagement" (a variable indicating the overall interest in ethics-related issues based on online activity). Minimising ETPI leads to a corresponding decrease in RETPI, while a low "Ethical Engagement" score reduces the overall RETPI value.

Mathematically,  $L$  and  $H$  can be adjusted or even defined as functions, offering flexibility for different modulations (see Fig. 6 and 7).

This plot (Fig. 6) illustrates the relationship between national ETPI scores (X-axis), Ethical Engagement (E) (Z-axis) and resulting RETPI values (Y-axis). The colour gradient (blue = low  $L$  values; red = high  $L$  values) reflects the magnitude of the continuous  $L$  parameter, which adjusts national ETPI values to account for regional engagement and interest. The surface shows how RETPI values change depending on the initial ETPI value and the intensity of regional ethical discourse, revealing the non-linear interactions between structural performance and public engagement.

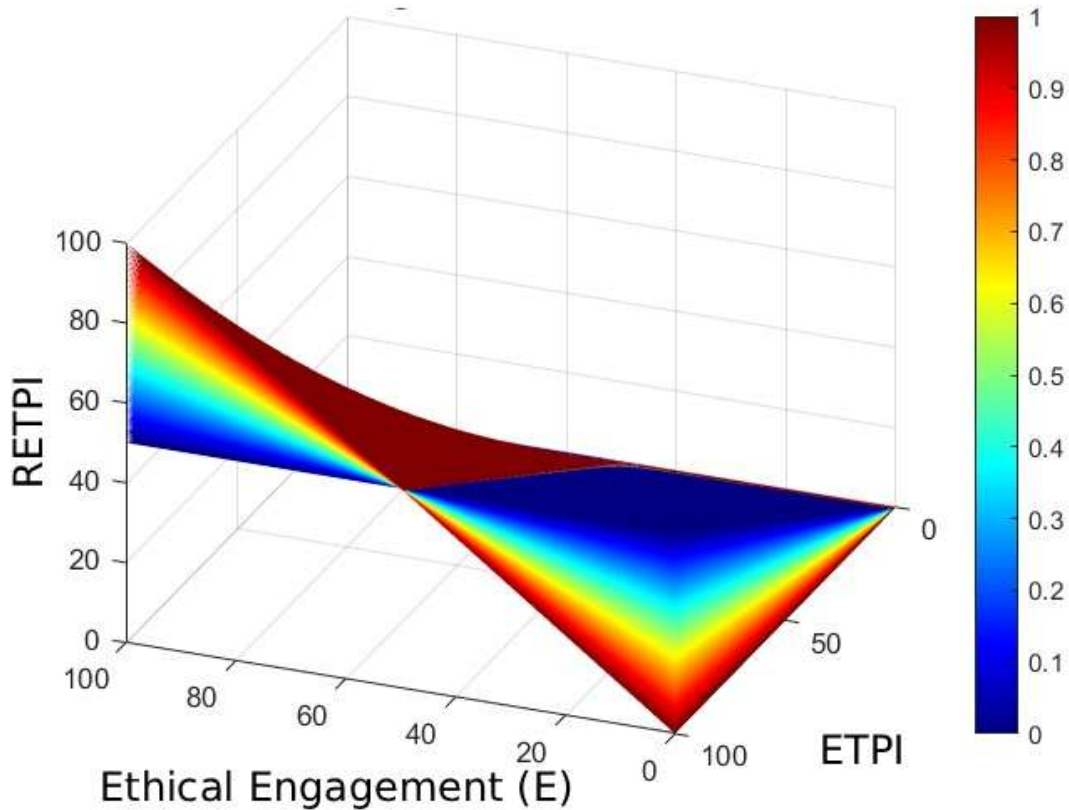
**Figure 6** 3D RETPI values modulation when  $H=L=X$  (detailed outlook of the ETPI)

Notes: This is the author's own MatLab 2022 elaboration (the legend shows the  $L=H$  values between 0 and 1). The ETPI, RETPI and 'Ethical Engagement' (E) are on a 0–100 scale (rescaled percentages). Own work.

This non-linear shape of the surface highlights that regional ethical resilience is not simply a linear function of national scores. Countries with moderate ETPI values but strong regional engagement can achieve relatively high RETPI. Conversely, even high-scoring countries may see reduced RETPI if regional engagement is weak. This visualisation confirms the added value of RETPI as a dynamic extension of ETPI that is sensitive to regional factors and capable of capturing both structural and cultural dimensions of ethical development.

**Figure 7** 3D RETPI values modulation when  $H=L=X$  (detailed overview of the 'Ethical Engagement (E)').

### 3D Surface Plot of RETPI with Continuous L Values



Notes: This is the author's own MatLab 2022 elaboration (the legend shows the  $L=H$  values between 0 and 1). The ETPI, RETPI and 'Ethical Engagement (E)' are on a 0–100 scale (rescaled percentage). Own work.

The next plot, Fig. 7, shows the RETPI plotted against continuous  $L$  values from a different perspective, which illustrates the relationship between the RETPI index and ethical topics more clearly. The X-axis represents ethical components, the Y-axis represents the resulting RETPI, and the Z-axis represents the baseline ETPI. The colour gradient (blue = low  $L$  values, red = high  $L$  values) reflects the strength of the  $L$  adjustment, capturing regional engagement with ethical topics. The surface shows that  $L$  has significant strength in adopting the RETPI to capture different types of future study targeting specific Ethical Engagements (E). This enables analysts to use the ETPI/RETPI framework to capture regional variations at their preferred level of sensitivity.

Taken together, Fig. 6 and 7 demonstrate how varying  $L$  (and  $H$ ) between 0 and 1 influences RETPI values. These figures highlight that increasing  $L(H)$  enhances the RETPI scores in regions with greater interest in ethics-related topics, while penalising regions with minimal interest.

### Implications:

The parameters  $H$  and  $L$  in this model reflect key choices in how ethics is quantified – whether to emphasise a solid ethical foundation (similar to feeding plants with nutrients) or active engagement with ethical issues (similar to plant growth). Both aspects are important to consider. In this study, we set  $H = L = 0.2$  to balance these factors, emphasising foundational ethics while allowing for active pursuit (approximately 20%). Further details on why the 20% threshold is an optimal choice for this study can be found in the “Replication Protocol for ETPI and RETPI” subsection in the methodology section, Step 6.

### Managing Low-Frequency Data in Ethics Indicators with the ME-Matrix

A challenge arises when ethics-related indices (e.g. HRI, EI, NRD, EFI) have low update frequencies. To address this, we design the ME (Moral-Ethical Missing Data Evaluation) matrix to handle incomplete data by updating ETPI values as new data becomes available. For example, the matrix handles gaps by using the most recent data available (LD) until updates occur. This approach ensures accuracy in ETPI updates, similar to the delayed updates found in widely used indicators such as GDP.

**Table 2** The Designed ME-Matrix Principle for Processing the Evaluation of Missing Data

Indicator	2022	2023	2024	2025	2026
CPI					LD
EFI					LD
EI			LD		
HDI			LD		
HRI			LD		
NRD			LD		
EPI			LD	LD	
	The data is missing, but will appear as soon as it is available. The ETPI values will be updated at that point.				
	These data are valid for this year				
LD	The latest available data for calculating the index is the LD (latest date when data are available).				

Source: Own concept. Notes: CPI: Corruption Perception Index. EFI: economic freedom index.

EFI: index of economic freedom (a more frequent substitute for the EFI). EI: education index.

HDI: human development index. HRI: human rights index. NRD: natural resource depletion.

EPI: environmental performance index. This is an example of an ME matrix.

### Handling of Missing Time-Series Data

The ETPI and RETPI frameworks are designed to maximise the probability of obtaining usable data across countries and years. However, gaps in time-series data are inevitable,

particularly for countries with restricted access to data (e.g. North Korea) or very small countries (e.g. San Marino, Saint Kitts and Nevis, Nauru). In such cases, we follow the general academic principle of working with the best available evidence while transparently updating results as new data becomes available.

### **Replication Protocol for ETPI and RETPI**

To ensure transparency and replicability, this section provides a step-by-step description of the procedures used to construct the Ethics Perception Index (ETPI) and the Regional Ethics Perception Index (RETPI). Each step is designed to be reproducible using publicly available data and standard statistical software.

#### **Step 1. Data sources**

The ETPI and RETPI are constructed from seven established indicators, all of which are publicly available.

- ✓ Corruption Perceptions Index (CPI) – Transparency International.
- ✓ Economic Freedom Index (EFI) – Fraser Institute.
- ✓ Human Development Index (HDI) – UNDP.
- ✓ Education Index (EI): UNDP.
- ✓ Human Rights Index (HRI) – Our World in Data.
- ✓ Environmental Performance Index (EPI): Yale University.
- ✓ Natural Resource Depletion (NRD, % of GDP): World Bank/UNDP.

Notes: Each component index can be replaced by an equivalent theoretical and comparable empirical proxy, provided this substitution is explicitly documented and justified. This modular architecture, conceptualised as a 'LEGO-style' principle in the methodology section, preserves structural coherence while allowing adaptability to data constraints or updated measurement frameworks. In the most recent empirical specification presented in this study, the Index of Economic Freedom (The Heritage Foundation, 2025) is used as a substitute with a higher frequency for the Fraser-based EFI. For consistency of notation, the abbreviation 'EFI' is retained.

All data were collected at the national level for the relevant period (where available). Where possible, regional data should be obtained by disaggregating national data (from sources such as Eurostat, national statistical offices, Google Trends and social network statistics).

#### **Step 2. Scaling of components**

All components are normalised to a 0–100 scale (Steps 1 and 2) before aggregation (Step 3). This ensures comparability across indicators with different units, such as percentages, ordinal scores and composite indices. Normalisation (scaling) is performed using min–max scaling across the full dataset (all countries and all years).

One important point to note is how outliers are handled. Rather than being removed, outliers are absorbed by the scaling procedure (Steps 1 and 2). This ensures that extreme values (e.g. extremely high levels of corruption or extremely low levels of human rights) are reflected in the index rather than being excluded. Researchers replicating the index should avoid trimming or winsorising, unless they are explicitly testing for robustness.

The next note concerns Time-Series Consistency. For longitudinal analysis, the same scaling parameters (minimum and maximum values) are applied across the entire time horizon. This prevents artificial jumps in the index caused by rescaling each year separately. As new data becomes available, the scaling parameters can be updated, but any changes must be documented.

To ensure comparability, the min-max procedures defined in Equations (1) and (2) are used to rescale components to a 0–100 range.

Higher depletion ( $NRD_{it}$ ) reduces the positively rescaled  $NRD_{it}^R$  index.

### Step 3. Aggregation into ETPI

The ETPI for country  $i$  at time  $t$  is the mean of the  $N$  scaled components:

$$ETPI_{it} = \left(\frac{1}{N}\right) \times \sum_{j=1}^N R_{jit} \quad (7)$$

Notes: Own formula.  $R$  is a rescaled (0–100) ETPI component ( $C_{it}$  for CPI, EFI, HDI, EI, HRI and EPI, and  $NRD_{it}^R$  for NRD).  $N = 7$  for the third generation of the ETPI index (seven components in total).

In the third generation of the ETPI index, all seven components are given equal weighting: CPI, EFI, HDI, EI, HRI, EPI and NRD. This approach is based on the principle of transparency and avoids subjective prioritisation. However, researchers wishing to test alternative weighting schemes (e.g. based on factor analysis or expert surveys) must explicitly report the procedure.

This yields a value between 0 and 100, with higher values indicating stronger ethical development.

### Step 4. Treatment of missing data (see the Math Model section)

### Step 5. Construction of the RETPI

The RETPI builds on the ETPI by incorporating regional modifiers that reflect public interest in ethics.

- ✓ RETPI is derived from ETPI by applying regional modifiers.
- ✓ The regional modifier (E) is based on the level of online interest in ethics-related topics (as measured by Google Trends, Social Nets, or an equivalent tool).
- ✓ Regional boundaries should follow official statistical classifications (e.g. NUTS-3 in the EU and state/province level elsewhere).
- ✓ Where regional data for one or more components is missing, national averages are used as proxies, which is clearly indicated. This approach was used for Latvia and Iceland (two relatively small countries) in the current study, while elsewhere 'NA' was retained.
- ✓ Bounds (L, H): Set at 0.2 in this study, but adjustable.
- ✓ Unscaled RETPI: see formula (5).

- ✓ Scaled RETPI: see formula (6)

### Step 6. Regional Modifiers in the RETPI Framework

The Regional Ethics Perception Index (RETPI) is based on the national-level ETPI and incorporates modifiers that capture regional variations in ethical awareness and engagement. Denoted  $E$ ,  $L$  and  $H$ , these modifiers adjust the baseline ETPI score to reflect regional differences in interest in ethical issues, as well as the potential amplification or attenuation of ethical performance. This means that the RETPI is not just a smaller-scale replication of the ETPI, but a genuinely region-sensitive measure. These regional modifiers are one of the new features of the third generation of ETPI and RETPI indices.

Modifier  $E$  (Ethical Engagement):

- ✓ Definition:  $E$  represents the level of public interest in ethical issues in a given region.
- ✓ Measurement: This is determined using proxies such as the frequency with which ethics-related terms (e.g. 'ethics', 'justice', 'corruption', 'human rights') are searched for online, as measured by tools such as Google Trends, Yandex Wordstat, social nets, or equivalent regional data sources.
- ✓ Scaling: Values are normalized to the interval  $[0, 1]$ , where 0 indicates no measurable interest and 1 indicates the highest level of interest observed across all regions.
- ✓ Interpretation: A higher  $E$  value suggests that ethical issues are salient in public discourse, which is assumed to strengthen the impact of ethical performance on regional development.

Modifier  $L$  (Lower Bound Adjustment):

- ✓ Definition:  $L$  sets the lower limit for adjustments when ethical engagement is weak.
- ✓ Function: Prevents RETPI from overstating ethical performance in regions where public interest in ethics is minimal.
- ✓ Mathematical role: When  $E$  approaches 0, the RETPI value is reduced by a factor proportional to  $(1 - L)$ .
- ✓ Interpretation:  $L$  ensures that regions with low ethical engagement cannot achieve artificially high RETPI scores based solely on national-level ETPI values.

Modifier  $H$  (Upper Bound Adjustment):

- ✓ Definition:  $H$  sets the upper limit of adjustment when there is strong ethical engagement.
- ✓ Function: Allows RETPI to reward regions with high public interest in ethics, amplifying the ETPI baseline.

- ✓ Mathematical role: When E approaches 1, the RETPI value increases by a factor proportional to  $(1 + H)$ .
- ✓ Interpretation: H ensures that regions with strong ethical engagement are recognised as having greater potential for ethical resilience and sustainable development.

The use of internet search activity as a proxy for modifier E is theoretically grounded in the transition from institutional to perceptual measurement. While national institutions are slow-moving 'stocks', regional ethical engagement is a 'flow' of public perception and salience. This allows the RETPI to capture a region's cultural-institutional accumulation, demonstrating how national institutional quality is perceived and utilised by local actors.

### **Choice of parameter values ( $L = H = 0.2$ for this study):**

In this study, L and H are both set to 0.2. This reflects a balanced compromise between sensitivity and stability.

- ✓ Moderation: A value of 0.2 enables meaningful adjustments to be made without overwhelming the baseline ETPI. In practice, this means the RETPI can vary by  $\pm 20\%$  relative to the ETPI, depending on regional engagement.
- ✓ Comparability: Setting both bounds symmetrically ensures that upward and downward adjustments are of equal magnitude, thus avoiding bias towards either penalisation or reward.
- ✓ Transparency: The value 0.2 is not arbitrary, but has been chosen to strike a balance between interpretability (it is easy to explain to policymakers) and analytical robustness (it is sufficient to capture regional variation without exaggeration).
- ✓ Future flexibility: Although 0.2 is used here, the framework permits L and H to be adjusted, or even defined as functions of empirical data (e.g. variance in regional ethical engagement). Researchers replicating RETPI may test alternative thresholds, but must report these explicitly.

Modelling precedent: why is 20% a widely accepted threshold?

In applied probability and resilience modelling, moderate, symmetrical thresholds are commonly introduced to account for uncertainty without destabilising the model (Cao & Feng, 2025; Jiménez-Valverde & Lobo, 2007; Wen et al., 2019). A threshold of 20% (0.2) is often used for this purpose as it strikes a balance between sensitivity and robustness.

This choice is supported across multiple disciplines.

- 1) In machine learning, for example, thresholds between 0.2 and 0.255 often yield the highest F-values, leading to optimal predictive performance (Brownlee, 2025).

- 2) In resilience engineering and infrastructure modelling, 20% is recognised as an effective boundary for capturing system fragility without overfitting (Hsu & Mostafavi, 2025).
- 3) In clinical decision-making and medical risk assessment, thresholds around 20% are commonly used to flag significant yet manageable risks (Patel et al., 2021).
- 4) In finance, thresholds of 20% or below are standard for interpreting financial ratios and stress indicators (Shemetev, 2012).
- 5) In uncertainty quantification, 20% is often cited as an optimal cut-off point for distinguishing signal from noise (Lye et al., 2019).

Taken together, these precedents justify the use of a 20% threshold in our study, demonstrating its methodological soundness and cross-disciplinary relevance.

### **Step 7. Estimating RETPI with Google Trends Data**

The RETPI builds on the ETPI by incorporating a regional modifier (E), which reflects public engagement with ethical issues. Google Trends provides a transparent, reproducible and freely available proxy for this engagement. The following protocol outlines how to estimate the RETPI using Google Trends data.

Sub-step 1: Define the search terms

Select a set of ethics-related keywords that are relevant across languages and regions. Examples: 'ethics', 'justice', 'corruption', 'human rights', 'sustainability'.

Where possible, use Google Trends' "topics" (which aggregate synonyms and translations) rather than single keywords to reduce linguistic bias.

Sub-step 2: Collect regional data

Go to Google Trends (can be replaced with other data sources).

Enter the chosen keywords/topics.

Set the geographical scope to the country of interest and select sub-regions (e.g. NUTS-2 or 3 regions in the EU, states in the US or provinces elsewhere).

Set the time frame (e.g. 2015–present or a specific decade).

Export the data as a CSV file. Each region will have a score between 0 and 100 representing relative search interest.

Sub-step 3: Normalise the modifier E.

Google Trends already scales values to [0, 100] within the chosen dataset.

Convert these to the interval [0, 1] by dividing by 100. Example: A region with a Trends score of 65 has an E value of 0.65.

This ensures comparability across regions and over time.

Sub-step 4: Apply the RETPI formula.

Remember the RETPI adjustment function (see formula (5)).

Finally, scale ETPI to [0, 100] (see formula (6)).

Sub-step 5: Worked example (test case):

Suppose we want to estimate the ETPI for Region A in 2025.

✓ ETPI baseline (T):

From the ETPI dataset, the ETPI for Region A's country is 0.72(on a scale of 0–1).

✓ Google Trends data (E):

The average trends score for ethics-related terms in Region A is 65, so  $E = 0.65$ .

✓ Parameters:

$L = 0.2, H = 0.2$ .

Apply the formula: Since  $E = 0.65 > 0.5$ , the upper-bound adjustment is used.

$$RETPI^U = T + \left(\frac{E - 50\%}{50\%}\right)(TH) = 0.72 + \left(\frac{0.65 - 0.5}{0.5}\right)(0.72 * 0.2) = 0.7632$$

✓ Scale to 0–100:

if the maximum RETPIU across all regions is 0.90, then:

$$RETPI = 100 \left(\frac{RETPI_{E,T}^U}{\max(RETPI^U)}\right) = 100 * \frac{0.7632}{0.9} = 84.8$$

Results: Region A's RETPI is 84.8.

Sub-step 6: Interpretation

If RETPI is greater than ETPI, this indicates that Region A performs well on ethical fundamentals and shows above-average public engagement with ethics, which amplifies its resilience potential.

Conversely, if RETPI is lower than ETPI, it reflects weak ethical engagement despite national performance.

Sub-step 7: Replication notes

This procedure can be replicated in R, Python or Excel using exported CSV files.

Researchers should document:

- ✓ keywords/topics used;
- ✓ Time frame;
- ✓ Regional boundaries;
- ✓ Scaling choices (L, H).

Alternative values of L and H can be tested for robustness, but these must be reported.

### **Step 8. Estimating resilience and recovery potential within the ETPI/RETPI framework**

Resilience and recovery are ethical performance dynamics relative to a higher-level benchmark. Below is a complete, implementable guide.

*Core definitions and intuition*

Resilience (short-term stability under shock): How well a territory maintains its ethical performance during or immediately after a disruption, relative to its parent unit (e.g. a municipality compared to a region, a region compared to a country, or a country compared to the world).

Recovery Potential (Medium-Term Forward Momentum): How quickly and reliably a territory regains or improves its ethical performance after a shock, relative to its parent unit.

These definitions align with the current state of knowledge in these fields (Shemetev, 2025).

Ethical baselines: Use ETPI for national baselines and RETPI for sub-national units. Both are scaled to 0–100 after component normalisation.

Reference horizon: Choose a clearly identified shock date or period and fix comparison windows:

- ✓ Pre-shock:  $t_0 - h$  to  $t_0 - 1$ .  $t$ : time;  $h$ : start of pre-shock period.
- ✓ Shock/impact:  $t_0$  to  $t_0 + s$ ;  $s$  (shock time): short; typically 1–2 years.
- ✓ The recovery window is defined as:  $t_0 + y$  to  $t_0 + k$ , where  $k$  is the end of the post-shock time (typically  $k \geq 3$ ) and  $y$  is the recovery start time ( $y \in [1; s]$ ). If  $y = 1$ , recovery is assumed to start instantly after  $t_0$ ; if  $y = s$ , recovery is assumed to start after the shock time ( $s$ ) has ended. The selection of  $y$  depends on the aims of the analysis.

Measurement setup and data preparation:

- ✓ Territorial levels:  $ETPI_{c,t}$  versus global aggregate or peer group average ( $c$  denotes for country;  $t$  – time).
- ✓ Regional/municipal:  $RETPI_{c,t,i}$  for the same country ( $i$  denotes for a municipality of a region).

Scaling consistency:

ETPI components:

- ✓ Min–max rescaling to 0–100 is required for the following: CPI, EFI, EI, HDI, HRI and EPI (or their substitutes via formula 1). Then, reverse-scale the initially negatively scaled NRD and rescale it to 0–100 using formula 2. See steps 1–3 of this step-by-step guide for details.
- ✓ The RETPI modifier E involves normalising Google Trends interest to  $[0, 1]$  and applying symmetric bounds  $L = H = 0.2$  for moderate adjustment. Rescale to 0–100 after  $RETPI^U$ . See steps 5–7 of this step-by-step guide for details.

Shock delineation:

- ✓ Define shocks explicitly: Policy change, pandemic onset, conflict outbreak and/or financial crisis. Justify the  $s$ ,  $k$  horizon and annotate  $t_0$ .

## Resilience and Recovery Metrics: A Coefficient Approach

This study introduces a new approach based on coefficients for estimating resilience and recovery metrics in ethics analysis (RETPI and ETPI).

### A. Level-based, territory (U) vs. parent (P)

- ✓ Definitions: U (territory) is a lower-level territorial unit or units. P (parent) is a higher-level territorial unit or units. For example, if U is a country's region, then P could be the entire country. If U is a country within the EU, for example, then P is the EU. If U is a municipality, then P can be the region in which it is located, or even the nation. If U is part of a municipality, then P is the entire municipality. The selection of U and P depends on the aims of the specific study to which the ETPI/RETPI concept is being applied.

- ✓ **Resilience ratio (RR)**: Immediate Ethical Resilience.

$$RR_U = \frac{X_{U,t_0+s}}{X_{U,t_0-1}}, X \in \{ETPI, RETPI\} \quad (8)$$

Notes: Own formula.

- ✓ Interpretation:  $RR \approx 1$  holds level;  $RR < 1$  declines;  $RR > 1$  improves under shock.
- ✓ **General Relative Resilience (RRel)**: Territory performance relative to parent.

$$RRel_U = \frac{X_{U,t_0+s}/X_{U,t_0-1}}{X_{P,t_0+s}/X_{P,t_0-1}} = \frac{\left(\frac{X_{U,t_0+s}}{X_{U,t_0-1}}\right)}{\left(\frac{X_{P,t_0+s}}{X_{P,t_0-1}}\right)} = \frac{RR_U}{RR_P} \quad (9)$$

Notes: Own formula.

- ✓ Interpretation:  $RRel \approx 1$  holds level;  $RRel < 1$  less resilient than parent;  $RRel > 1$  more resilient than parent. Note: '/' means 'divide by'.
- ✓ **Additive Relative resilience (ARRel)**: The size of the territory performance bonus relative to the parent (10).

$$ARRel_U = \frac{\left(\frac{X_{U,t_0+s} - X_{U,t_0-1}}{X_{U,t_0-1}} - \frac{X_{P,t_0+s} - X_{P,t_0-1}}{X_{P,t_0-1}}\right)}{\left(\frac{X_{P,t_0+s} - X_{P,t_0-1}}{X_{P,t_0-1}}\right)}$$

Notes: Own formula.

- ✓ Interpretation:  $ARRel \approx 0$  indicates that the level is held;  $ARRel < 0$  indicates that the U level is less resilient than the parent by  $100\% - ARRel_U$  (where 100% represents the level of P); and  $ARRel > 0$  indicates that the U level is more resilient than the parent by  $100\% - ARRel_U$  (where 100% represents the level of P). ARRel is

an analytical tool used to analyse the size of the resilience gap or surplus compared to the parent.

What it measures:

- ✓ The numerator is the difference between the unit's relative change and the parent's relative change. The denominator is the parent's relative change.
- ✓ The result is how much stronger or weaker the unit's resilience is compared to that of its parent, expressed as a proportion of the parent's own change.

B. Trajectory-based, average yearly momentum

- ✓ **Recovery Potential Index (RPI):** The average annual recovery rate following a shock (11).

$$RPI_U(k) = \frac{X_{U,t_0+k} - X_{U,t_0+s}}{k - s}$$

Notes: Own formula.

- ✓ Interpretation: Positive values indicate net recovery pace per year; compare across territories.
- ✓ **Relative recovery (RRecRel):** Territory's (U) recovery pace vs. parent (P) (12).

$$RRecRel_U(k) = \frac{X_{U,t_0+k} - X_{U,t_0+s}}{X_{P,t_0+k} - X_{P,t_0+s}}$$

Notes: Own formula.

- ✓ Interpretation:  $RRecRel_U(k) > 1$  indicates faster recovery than the parent, while  $RRecRel_U(k) < 1$  indicates slower recovery.
- ✓ **Additive Relative recovery (ARRecRel):** the size of the Territory's (U) recovery pace vs. parent (P) (13).

$$ARRecRel_U(k) = \frac{\left( \frac{X_{U,t_0+k} - X_{U,t_0+s}}{X_{U,t_0+s}} \right)}{\left( \frac{X_{P,t_0+k} - X_{P,t_0+s}}{X_{P,t_0+s}} \right)}$$

Notes: Own formula.

- ✓ Interpretation:  $ARRecRel \approx 0$  indicates that the level is held;  $ARRecRel < 0$  indicates that the U has less recovery potential than the parent by  $ARRecRel_U(k) - 100\%$  (where 100% represents the level of P); and  $ARRecRel > 0$  indicates that the U has more recovery potential than the parent by  $ARRecRel_U(k) - 100\%$  (where 100% represents the level of P). ARRecRel is an analytical tool used to analyse the size of the resilience gap or surplus compared to the parent.

## C. Slope- and variance-aware robustness

- ✓ **Shock slope (SS):** Direction and steepness at impact (14).

$$SS_U = \frac{X_{U,t_0+s} - X_{U,t_0}}{s}$$

Notes: Own formula.

- ✓ **Post-shock stability (PSS):** Volatility of recovery path (15).

$$PSS_U(k) = sd(X_{U,t}), t \in [t_0 + s, t_0 + k]$$

Notes: Own formula.

- ✓ Interpretation: Lower sd implies steadier recovery; use alongside RPI.
- ✓ **Composite ethical resilience score (ERS):** Combines RRel (9), SS (14), and PSS (15) with clear weights (default equal unless justified) (16):

$$ERS_U = w_1 * RRel_U + w_2 * (1 - norm(|SS_U|)) + w_3 * (1 - norm(PSS_U))$$

Notes: apply min–max normalisation to "norm(.)" per cohort. Own formula.

Due to the limitations of this paper and the fact that the current global crisis has been ongoing since 2020 and consists of two significant crises at once: The first is the ongoing global pandemic of the SARS-CoV-2 virus (since 2020), and the second is the ongoing global military conflict and its consequences (since 2022). At the time of writing, the crisis period is still ongoing. Therefore, this could be a subject for future studies.

However, the current resilience and recovery potential within the crisis can be estimated using the following toolbox. Within-crisis resilience (17):

$$ME_{resilience} = \frac{\left( \frac{X_t^U - X_{t-1}^U}{X_{t-1}^M} - \frac{X_t^P - X_{t-1}^P}{X_{t-1}^P} \right)}{\left( \left| \frac{X_t^P - X_{t-1}^P}{X_{t-1}^P} \right| \right)}$$

Notes: Own formula.

Notes: own work. U: local territory unit; P: parent territory unit; t: current time; t-1: previous time period; X ∈ {ETPI, RETPI}.

Within-crisis recovery potential (18):

$$ME_{recovery} = \frac{\left( \frac{X_t^U - X_{t-1}^U}{X_{t-1}^U} \right)}{\left( \frac{X_t^P - X_{t-1}^P}{X_{t-1}^P} \right)}$$

Notes: Own formula.

Notes: own work. U: local territory unit; P: parent territory unit; t: current time; t-1: previous time period; X ∈ {ETPI, RETPI}.

**Worked example: regional vs. national.**

Assume that Country C has an ETPI baseline and Region R has a RETPI baseline. Shock  $t_0=2020$ ; impact  $s=1$ ; recovery window  $k=5$ .

1) Inputs:

✓ **ETPI:**  $t_0 - 1 = 2019: 84.5; 2021: 83.0; 2025: 86.0$ .

✓ **RETPI<sub>CR</sub>:** 2019: 82.0; 2021: 81.5; 2025: 85.5.

2) Resilience:

✓  $RR_R = \frac{81.5}{82.0} = 0.994$

✓  $RR_C = \frac{83.0}{84.5} = 0.982$

✓  $RRel_R = \frac{0.994}{0.982} = 1.012 \rightarrow$  Region R is slightly more resilient than the parent country C.

✓  $RRel_R = \frac{\left(\frac{81.5-82.0}{81.5} - \frac{83.0-84.5}{84.5}\right)}{\left(\frac{83.0-84.5}{84.5}\right)} = 0.66 \rightarrow$  In other words, the region R absorbed the shock more effectively than the parent benchmark (C) did, suffering 33% [100% – 66%] of the shock compared to 66%. In simple terms, since both R and C declined, region R suffered 33% [100% – 66%] of the shock that its parent country C suffered at 100% in relative terms.

$\nearrow$  R: -0.61%       $\nearrow$  C: -1.775%  
 $\searrow$  C: +1.775%

If there were a region N within country C that suffered no decline (0%), then using the same approach, we would find that:  $(0\% - [-1.775\%]) / 1.775\% = 100\%$ . In this case, country C suffered 100% more than region N, which suffered 0% [100%-100%] of the shock of its own country C.

Imagine another region, G, within country C that suffered a 3.55% decline. Using the same approach, we would get:  $(-3.55\% - [-1.775\%]) / 1.775\% = -100\%$ . In this case, region G would have suffered  $100\% - (-100\%) = 200\%$  of the shock that its parent country C suffered in relative terms. Consequently, the result of  $(-3.55\% - [-1.775\%]) / 1.775\% = -100\%$  would mean that country C suffered -100% (in other words, the shock for C was twice as easy as for G).

3) Recovery potential:

✓  $RPI_R(5) = \frac{85.5-81.5}{5-1} = \frac{4}{4} = 1 \rightarrow$  The recovery speed is 1.0 points per year.

✓  $RPI_C(5) = \frac{86.0-83.0}{5-1} = \frac{3}{4} = 0.75 \rightarrow$  The recovery speed is 0.75 points per year.

✓  $RRecRel_R(5) = \frac{85.5-81.5}{86.0-83.0} = \frac{4}{3} = 1.33 \rightarrow$  The region recovers roughly 33% faster than the country in absolute terms.

$$\checkmark \text{ARRecRel}_R(5) = \frac{\left(\frac{85.5-81.5}{81.5}\right)}{\left(\frac{86.0-83.0}{83.0}\right)} = 1.36 \rightarrow \text{The region recovers roughly 36\% faster than}$$

the country in relative terms.

4) Stability checks:

$$\checkmark \text{SS}_R = \frac{81.5-82}{1} = -0.5 \rightarrow \text{During the crisis, the region lost 0.5 points per period.}$$

$\checkmark \text{PSS}_R(5)$ : Calculate the standard deviation (SD) across the 2021–2025 RETPI. A positive trend occurs when it is lower than that of the peers.

5) Direct verdict:

$\checkmark$  Region R demonstrates slightly higher immediate resilience and a notably faster recovery pace than its national baseline.

To facilitate immediate cross-disciplinary application and ensure total procedural transparency, Annex C provides a finalised Standardised Implementation Protocol. This annex serves as a 'quick-start' guide, consolidating all data sources, scaling rules and modular calculation steps into a single, replicable workflow.

### **LEGO-style principle is one that can be applied in a variety of ways**

Although the ETPI and RETPI are designed to be transparent and replicable, we acknowledge that, as with any composite index, their implementation depends on the availability of reliable base data.

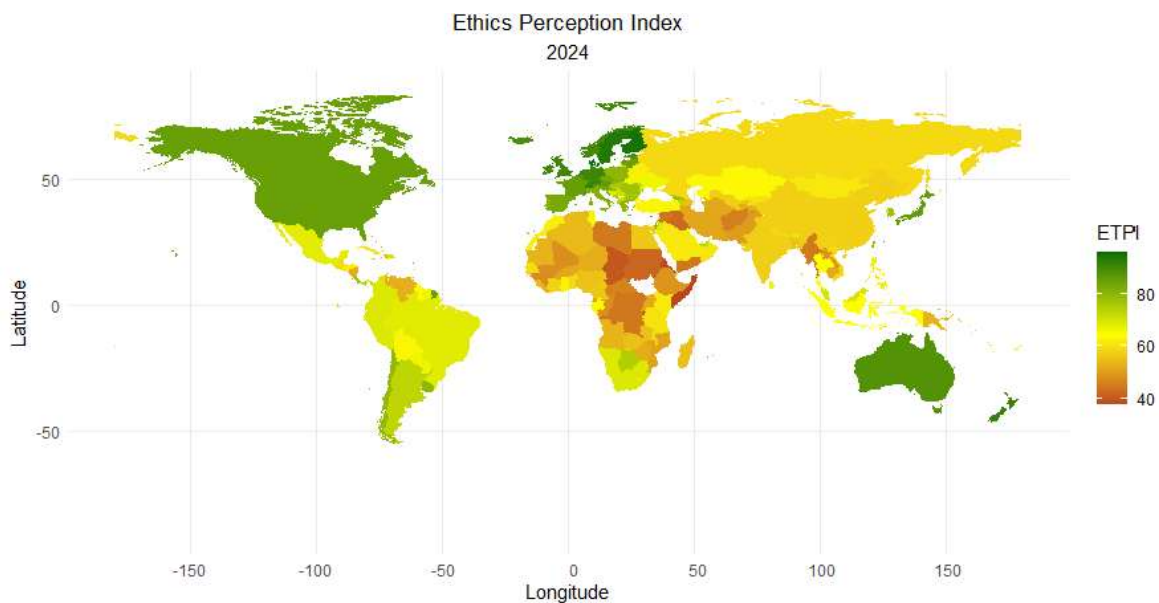
However, compared to many existing indices, such as the Social Progress Index (SPI (Social Progress Imperative, 2025b)), which relies on survey-based indicators (e.g. respondents reporting experiences of theft), the ETPI and the RETPI are constructed from internationally standardised, publicly available numerical datasets. This makes them less vulnerable to data gaps and cultural biases.

Furthermore, the indices are designed in a 'LEGO-style': if one component is unavailable, it can be substituted with a comparable indicator (e.g. replacing the 'Our World in Data' human rights index with the Fariss et al. (2020) human rights index (Fariss et al., 2020) [or a similar index], rescaled to 0–100). Similarly, the Education Index can be proxied through the Human Development Index and the regional engagement component of RETPI can be derived from alternative digital sources (e.g. social media data) if Google Trends are unavailable. This modularity, combined with the ME-Matrix approach to missing data, ensures that the ETPI and the RETPI remain computable and adaptable, even when some inputs are incomplete or discontinued. While data limitations cannot be eliminated entirely, they are significantly less restrictive within the ETPI/RETPI framework than within many existing indices, which are rigidly tied to fixed indicator sets.

## RESULTS

The Ethics Perception Index (ETPI) provides a quantitative measure of ethical perceptions across countries, assessing moral-ethical growth on a global scale. Fig. 8 shows the ETPI for 174 countries. The index identifies countries with the highest ethical perceptions, such as Denmark (95.9), Finland (94.8) and Sweden (93.7). Countries are ranked on the basis of aggregated perception data, providing insight into regional differences and the global ethical landscape. The standardised ETPI scores serve as a tool for comparative analysis, reflecting each nation's ethical perception based on specific indicators.

**Figure 8** Ethics Perception Index (ETPI), 2024



Source: Own processing in R.

Countries such as Germany (90.6), the United Kingdom (90.6) and Ireland (90.5) demonstrate consistently high ethical practices, with only minor fluctuations. These nations perform well in most areas covered by the ETPI Index, particularly in terms of economic freedom and human development. A broader group of ethically strong nations includes Australia (88.1), Austria (86.2), Belgium (87.6), Canada (85.2), Switzerland (92.3), the Czech Republic (83.2), Cyprus (82.8), Denmark (95.9), Finland (94.8), Greece (80.3), Iceland (89.2), Japan (85.8), Latvia (84.8), Norway (89.9), Singapore (85.4), Sweden (93.7) and several others. Annex A provides a comprehensive list of ETPI values for all countries from 1995 to 2024.

The United States presents an interesting case as a large, developed nation (ETPI: 85.14) with moderate challenges in economic freedom (77.5), corruption (Corruption Perception Index: 75) and environmental sustainability (Environmental Performance Index: 65.53). However, the country's exceptionally high levels of human development (96 on the Human

Development Index) and education (88.5 on the Education Index) significantly bolster its overall ethical standing.

Several other countries, while performing moderately well, have lower scores, suggesting areas for potential improvement. For example, Hungary (75.5), Botswana (74.7) and Brazil (68.4) have room for improvement in the areas of control of corruption, environmental sustainability and management of natural resources. While these countries maintain commendable ethical standards, addressing these specific weaknesses could improve their future scores.

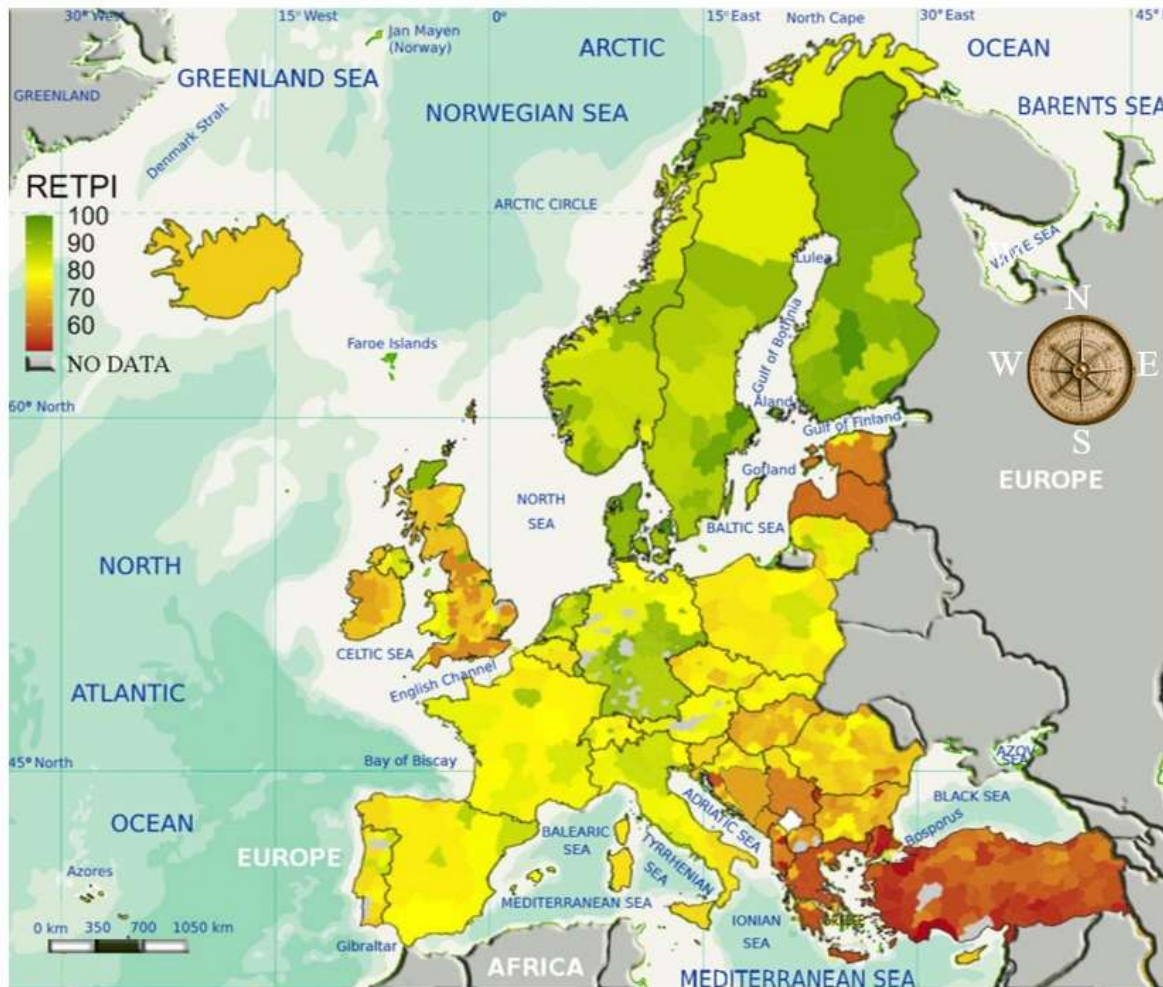
Brazil (ETPI: 68.4), an example of a large developing country in this ethical sector, faces serious challenges in the areas of justice, economic freedom, corruption and environmental issues such as deforestation, all of which have a negative impact on its ETPI. However, Brazil performs relatively well in certain areas of the Economic Freedom Index, including business freedom (67), monetary freedom (71.6) and trade freedom (66.8). In addition, its strong scores in human development (78.6), education (67.3), human rights (86.2) and natural resource management (91) help to partially offset the negative impact of its environmental struggles, reflected in a lower Environmental Performance Index (55.5), as well as other struggles.

At a lower end of the spectrum (but far from the bottom), countries such as Kazakhstan (63.2), Turkey (62.9), Belarus (61.8), Honduras (61.9) and Morocco (61.8) face significant ethical challenges. These countries struggle with corruption, underdeveloped human capital and inadequate sustainable practices. Efforts to strengthen governance and ethical frameworks could lead to significant improvements in their ethical scores.

China is a prime example of this ethical sector, with an ETPI score of 57.5. However, the country faces significant challenges in terms of economic freedom (53.6), corruption (49) and environmental performance (36.5). This reflects major issues relating to clean water, soil and air, as well as human rights (17.6). Conversely, China benefits from strong human capital, with a score of 81.5 on the Human Development Index, and a very low level of natural resource depletion — just below 2% of GDP. As the NRD component is negatively scaled (where lower depletion is better), this low raw value translates into a high positive score of 98.1 after rescaling with formula (2). In other words, China's minimal depletion of natural resources has a positive impact on its overall ETPI. Although China's Education Index is relatively low at 66, this reflects a significant discrepancy between the general level of education and the substantial proportion of highly educated individuals. For instance, its average IQ ranking places it among the top five globally (World Population Review, 2024). This provides a strong foundation for a potential rise in its ethical standards.

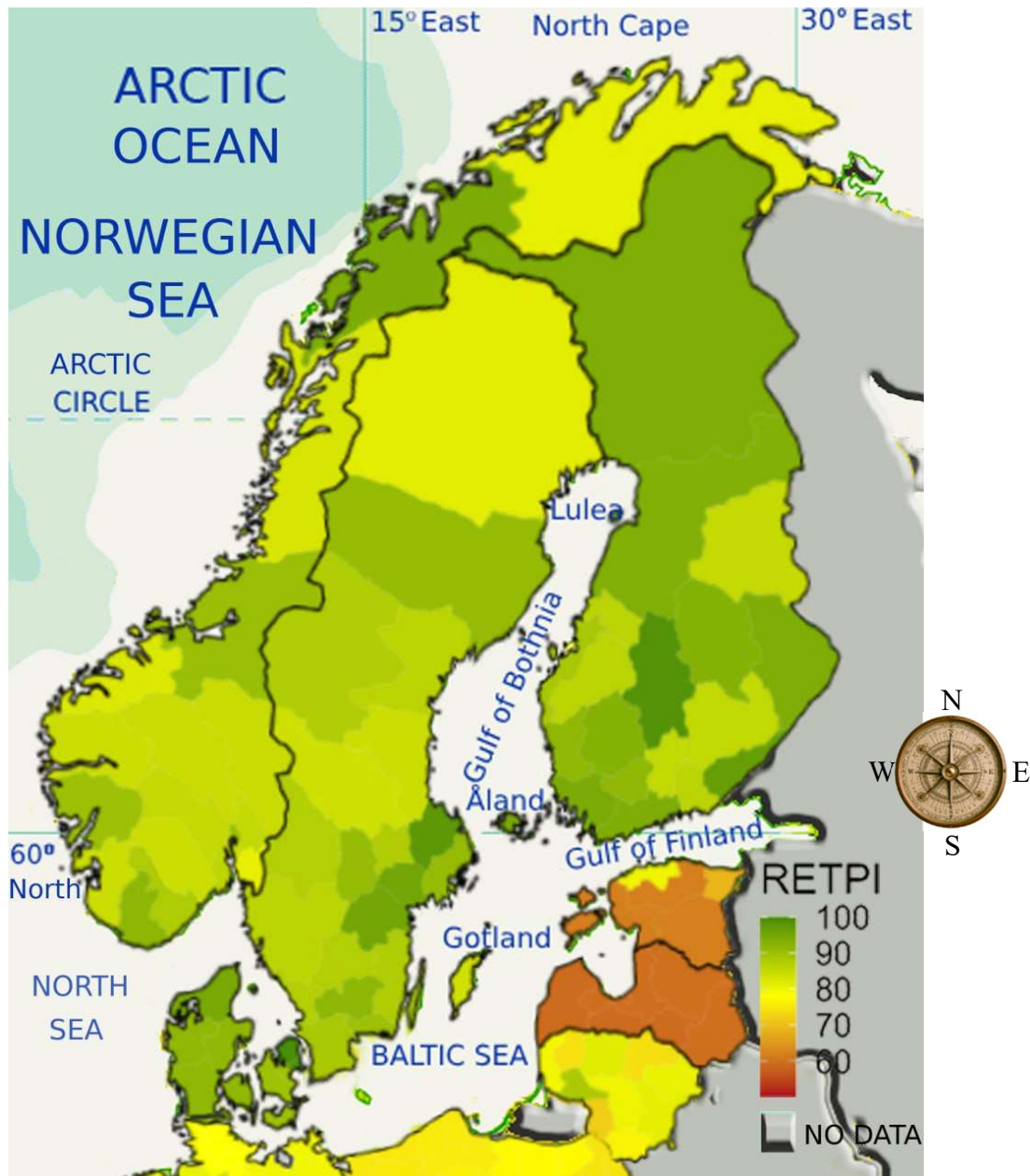
It is crucial to recognise that ethical standards are not necessarily uniform across a country, especially in large nations with multiple regions. The Regional Ethical Perception Index (RETPI) adds depth to this understanding by capturing regional differences in ethical practices. Fig. 9 illustrates the RETPI, rescaled to match the global ETPI scores for 2024.

**Figure 9** Regional Ethics Perception Index (RETPI) for Europe, rescaled to global ETPI (2024)



Source: Own processing in R. Moldova, Belarus, the Caucasus states, Russia and Ukraine are omitted because, although these countries are located in geographical Europe, they are affected by military conflicts, which has an impact on ethics. These countries therefore deserve a separate study. There is no data for the Kosovo region. Map scale factor =  $\sec(\varphi)$ , where  $\varphi$  is the latitude in radians, and  $\sec(\varphi) = 1/\cos(\varphi)$  (Snyder, 1987).

Fig. 9 illustrates the significant regional disparities in ethical standards within large countries. By contrast, ethical considerations in Latvia are relatively consistent and homogeneous across the country. This uniformity is due to the comparatively low level of public interest in ethical issues, as evidenced by per capita internet search data. Nevertheless, Latvia's ethical development is relatively advanced on a global scale, particularly compared with non-European countries (see Annex A for more details).

**Figure 10** Regional Ethics Perception Index (RETPI) for the Scandinavian region

Source: Own processing in R.

Map scale factor =  $\sec(\varphi)$ , where  $\varphi$  is the latitude in radians, and  $\sec(\varphi) = 1/\cos(\varphi)$  (Snyder, 1987).

Another notable feature is that Scandinavian countries consistently rank highly in international assessments of ethics, governance, and social trust (alongside some other regions). Fig. 10 shows that Sweden, Norway, Denmark and Finland have some of the highest ETPI values, reflecting their strong performance in areas such as corruption control, human rights, education and environmental stewardship. This naturally raises the question of whether such countries should be used as fixed reference benchmarks, with their scores set as the maximum against which all others are scaled. While this approach has the advantage of

intuitive interpretability — anchoring the index to a widely recognised ethical leader — it also introduces several methodological drawbacks. Firstly, it imposes the normative standards of one region on all others, which could bias comparisons across diverse cultural and institutional contexts. Secondly, ceiling effects may be encountered: if another country or region surpasses the Scandinavian benchmark in a specific area (e.g. environmental performance), the framework would be unable to reflect this improvement. Thirdly, neutrality is reduced as the benchmark becomes dependent on the trajectory of a single country rather than the empirical distribution of all observations. For these reasons, we use empirical min–max scaling across all countries and years (see the methodology section), which preserves comparability, avoids normative bias and enables the index to recognise new leaders as they emerge. Nevertheless, the consistently high Scandinavian scores confirm the validity of our approach, demonstrating that the ETPI/RETPI framework aligns with established perceptions of these countries as global ethical frontrunners.

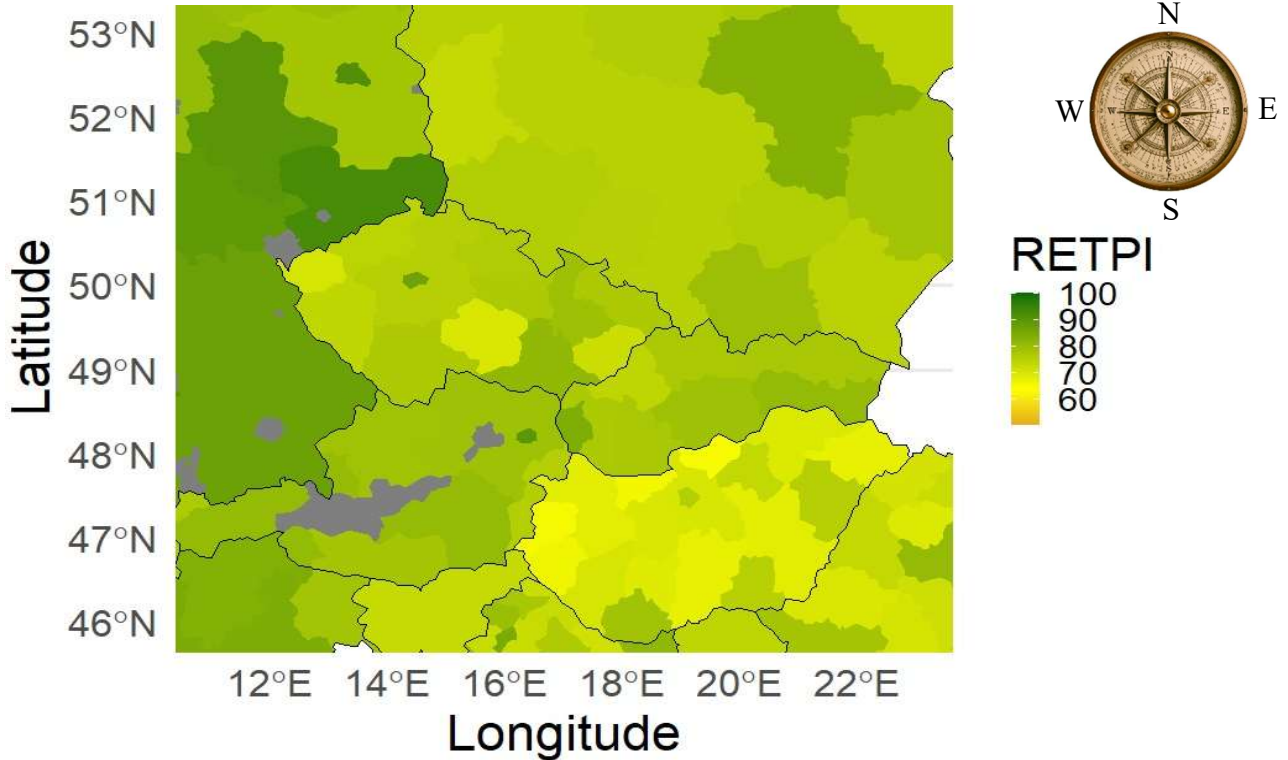
Other exceptions include Serbia and Greece, where ethical standards remain relatively high compared to global benchmarks, but are relatively homogeneous within the country. In Greece, certain regions such as Epirus, the Thessaloniki area within Macedonia and parts of the Peloponnese have significantly higher ethical standards than the rest of the country (in particular Βόρειος Τομέας Αθηνών, Κεντρικός Νότιος, Πειραιάς, Νήσοι, and Ανατολική Αττική micro-regions). It should be noted that Mount Athos is excluded from the analysis due to insufficient data.

It is also interesting that capital regions often demonstrate the highest ethical standards in terms of their interest in ethical issues. Examples of this pattern can be seen in the Prague region in the Czech Republic, the Bratislava region in Slovakia, the Madrid region in Spain (which is competing with the regions of Navarra and Catalonia), the Paris region in France (which includes the departments of Essonne, Hauts-de-Seine, Seine-et-Marne and Seine-Saint-Denis, as well as other micro-regions close to Paris), and the Tallinn region in Estonia. Fig. 11 illustrates these trends in Central Europe, where Prague and Vienna demonstrate the highest ethical performance within their respective countries. However, this is not the case everywhere.

For example, the regions of Central Finland (Keski-Suomi) and South Karelia (Etelä-Karjala) outperform the region of Uusimaa, which includes the capital Helsinki, albeit by a small margin of around 5% per capita. A similar situation can be observed in Turkey, where regions such as Bayburt, Çankırı, Sinop, Gümüşhane and Burdur have higher RETPI scores than Istanbul, the de facto capital region (although Ankara, the de jure capital, has significantly higher RETPI scores). In Germany, regions such as Bergstraße, Darmstadt,

Kreisfreie, Frankfurt am Main, Gießen, Landkreis and Groß-Gerau have higher ethical standards per capita than Berlin and its environs.

**Figure 11** Regional Ethics Perception Index (RETPI) for the Central Europe



Source: Own processing in R. Grey colour indicates the absence of data. White indicates that the regions are outside the scope of this study.

Map scale factor =  $\sec(\varphi)$ , where  $\varphi$  is the latitude in radians, and  $\sec(\varphi) = 1/\cos(\varphi)$  (Snyder, 1987).

In some cases, a capital region has strong ethical indicators but faces competition from other micro-regions with comparable ethical development. This is the case in the UK, where Camden and the City of London compete with micro-regions such as Antrim and Newtownabbey, Barking & Dagenham, Belfast and Bradford. Similarly, in Poland, the capital Warsaw competes with micro-regions such as Ciechanowski, Ostrołęcki, Płocki and Radomski.

## DISCUSSION

### Existing Ethical Indices: Limitations and the Need for a Unified Framework

The majority of existing studies on ethics (see Tab. 3) focus narrowly on micro-dimensions of the field, often exploring issues that are not measurable or too specific (see Tab. 4). A notable example is the extensive research devoted to subfields of medical ethics, such as euthanasia (Ebrahimi, 2012; Fernandes, 2001; Narbekovas & Meilius, 2004) or abortion (Cantens, 2019;

Dubner & Levitt, 2006; Kaczor, 2023). These studies typically suffer from two major limitations: they narrow the broader concept of ethics, and they lack quantifiable metrics for evaluating ethical standards. The introduction of the Ethics Perception Index (ETPI) and the Regional Ethics Perception Index (RETPI) is the first attempt to comprehensively and quantitatively assess ethics within societies.

**Table 3** Competing indices to ETPI and RETPI

<b>Indicator</b>	<b>Brief Description</b>	<b>Source Citation</b>
<b>Dow Jones Sustainability Indices (DJSI)</b>	Focuses primarily on the financial sector and lists firms with high ethical standards, often excluding unethical firms from financial lists.	(Carlos & Lewis, 2018; Johnson, 2013; Lee & Faff, 2009; Standard Ethics, 2021)
<b>Global Business Ethics Survey (GBES)</b>	A longitudinal study conducted by the Ethics & Compliance Initiative (ECI) that covers ethical practices by analysing responses from employees across 42 countries.	(ECI, 2024)
<b>French Ethics Index</b>	An index that assesses corporate ethics based on 43 large companies, each assigned a rating corresponding to its ISIN.	(Standard Ethics, 2024a)
<b>Ethics Index (Australia)</b>	Based on a national survey conducted by Ipsos in Australia, assessing the perceived ethical behaviour of various professions and sectors.	(Governance of Australia & Ipsos, 2024)
<b>World Index of Moral Freedom (WIOMF)</b>	A freedom-based approach, proposed by the Fundación para el Avance de la Libertad, that measures ethics by assessing five categories: religion, bioethics, drugs, sex, and family/gender.	(Fundación para el Avance de la Libertad, 2019)

Source: Own work.

There have been earlier attempts to construct general ethical frameworks, such as Benjamin Franklin's dissertation on "Liberty and Necessity, Pleasure and Pain" (Franklin, 1725). In this work, Franklin explores moral-ethical issues by suggesting that humans, unlike animals, derive ethical behaviour from the interplay of pain (or "uneasiness" or discomfort) and pleasure that occurs when desires are satisfied in order to avoid discomfort. While such theoretical frameworks offer deep philosophical insights (Aumann & Hart, 1992; Coeckelbergh, 2012; Hauptman, 2019), they do not provide a mechanism for quantifying ethics, leaving a gap in current knowledge. In contrast, the ETPI and RETPI indices address this gap by providing a reliable and replicable method for measuring ethics.

Moreover, it was clear from the earliest studies of morality and ethics that not all individuals are morally equal, since the factors that shape personal ethics – such as education – vary widely. Franklin himself noted this in 1735, recognising that ethics is influenced by local, regional phenomena (Franklin, 1735). This underlines the need for ethical indices that can account for regional and micro-regional variations. The ETPI and RETPI indices are

uniquely suited to meet this need by providing quantifiable measures that can be applied at both national and regional levels.

In contrast, there are several quantitative studies on ethics (see Tab. 4), the most prominent of which is the Global Business Ethics Survey (GBES) conducted by the Ethics & Compliance Initiative (ECI). This longitudinal study covers ethical practices in 42 countries (ECI, 2024) and includes responses from over 18,000 employees (ECI, 2020). It focuses on key areas such as pressure to compromise ethical standards, observations of misconduct, reporting of misconduct and perceived retaliation against whistleblowers (ECI, 2024). While the GBES provides valuable insights into ethics in the workplace, recent findings highlight serious challenges, including rising workplace pressures, increased misconduct and weak ethical cultures. Companies use the GBES data to benchmark their ethics programmes, but its scope remains limited to employee ethics in corporate settings.

**Table 4** Comparison with Specialized Ethical/Social Indices

Existing Index	Primary Focus and Limitations	Key Benefit of ETPI/RETPI in Comparison
<b>Dow Jones Sustainability Indices (DJSI)</b>	Focuses almost entirely on the <b>financial/corporate sector</b> and excludes broader societal dimensions of ethics.	<b>Holistic Societal Scope:</b> Captures the <i>full range of ethical standards</i> that govern society, integrating cultural, social, economic, and political factors, moving beyond mere corporate ethics.
<b>Global Business Ethics Survey (GBES)</b>	Focuses <b>solely on employee ethics</b> ; results suffer from <i>subjectivity bias</i> and the sample size is insufficient for detailed national, regional or micro-regional analysis.	<b>Multi-level &amp; Objective:</b> Provides a transparent, <b>replicable, and quantifiable</b> framework. <b>RETPI</b> is uniquely capable of assessing ethics at the <b>regional, local, and sub-national levels</b> , accounting for variations often missed by large national surveys. <b>ETPI</b> captures national level.
<b>French Ethics Index (Standard Ethics)</b>	Measures <b>corporate ethics</b> using a small number of large companies; suffers from <b>subjectivity</b> and analysis is difficult to reproduce; provides <b>no regional insights</b> .	<b>Transparent and Reproducible:</b> Offers a quantifiable measure with a <b>transparent methodology</b> and explicitly fills the gap in providing insights at the <b>national (ETPI) and sub-national levels (RETPI)</b> .
<b>World Index of Moral Freedom (WIOMF)</b>	<b>Narrow freedom-based approach</b> (e.g., drugs, sex, bioethics); methodology is subjective and complicates creation of a universal index.	<b>Comprehensive, Quantitative, and Objective:</b> Assesses the ethical background using a <b>quantitative basis</b> . Incorporates macro-dimensions often omitted by freedom indices, such as <b>corruption, education, human development, and environmental issues</b> .
<b>Ethics Index (Australia, Ipsos)</b>	Limited to a <b>single national focus (Australia)</b> ; relies on public <i>perception</i> rather than the quantifiable conditions that influence ethical development.	<b>Global Applicability &amp; Condition-Focused:</b> Provides a <b>global perspective</b> , assessing countries, regions, and localities worldwide. Focuses on quantifying the underlying <b>conditions and factors</b> that promote or inhibit ethical behavior.

Source: Own work.

There are striking patterns in the GBES Index. For example, in 2023 Russia is the country with the lowest pressure to compromise ethical standards (ECI, 2024, Section 1), followed by Indonesia and Colombia. Meanwhile, Egypt, Colombia and Brazil have the highest percentages of employees working in strong ethical cultures (ECI, 2024, Section 5). However, the replicability of these results has been debated, and potential biases related to subjective assessment have emerged.

Despite its broad reach, the GBES survey has obvious limitations. It focuses solely on employee ethics, neglecting broader corporate and societal ethical dimensions. In addition, while the sample size is large, it is insufficient to allow for detailed regional or micro-regional analysis, which contradicts the understanding of Franklin (1735) and subsequent scholars that ethics is shaped by multiple local factors, including education. As such, the GBES provides only a narrow lens through which to view ethics.

The Standard Ethics Index (Standard Ethics, 2024b) offers a different perspective by analysing the ethical practices of large companies. For example, the French Ethics Index of September 2024 is based on 43 large companies, each of which is assigned a rating corresponding to its ISIN (International Securities Identification Number (Standard Ethics, 2024a)). While the scale of this index is impressive, it also has several shortcomings:

- ✓ Subjectivity bias: Analysis is not easily reproducible.
- ✓ Limited scope: The ethics of a large country like France are represented by a small number of large companies.
- ✓ Narrow ethical focus: The Index assesses corporate ethics, leaving out other important aspects of societal ethics.
- ✓ Lack of regional analysis: The Index does not provide insights at the sub-national level.
- ✓ Bias towards global companies: When assessing transnational companies, it is difficult to attribute ethical practices to a specific country due to global supply chains.

These limitations leave a significant gap in the field, which the ETPI and RETPI indices aim to fill.

Another recent attempt to assess ethics is the measurement of freedoms carried out by the Fundación para el Avance de la Libertad (2019). This approach measures five categories: religion, bioethics, drugs, sex and family/gender (Fundación para el Avance de la Libertad, 2019). The idea is that an ideal country would have broad freedoms in these areas.

However, the methodology is subjective and the lack of a reproducible, transparent and quantitative basis undermines its validity (Shemetev, 2022). For instance, Afghanistan was

ranked the lowest overall in 2020, followed by the United Arab Emirates and Saudi Arabia (Fundación para el Avance de la Libertad, 2019)). Nevertheless, according to Varlamov (2021a, 2021b), for example, Afghanistan should have received a higher score that year for having the easiest and cheapest access to drugs. This is one of the five components used by Fundación para el Avance de la Libertad (2019) to measure ethics in this index. Furthermore, despite being known for their strict drug control practices (Koç, 2023), the UAE and Saudi Arabia were ranked two and three positions ahead of Afghanistan respectively in this index. This raises concerns about the accuracy and usefulness of the Fundación para el Avance de la Libertad's index.

The Governance Institute of Australia has taken a different approach with its Ethics Index, based on a national survey conducted by Ipsos. This survey assesses the ethical behaviour of various professions and sectors across Australia and calculates an 'Ethics Index Score' that reflects the perceived level of ethical behaviour (Governance of Australia & Ipsos, 2024).

While this is a valuable tool for assessing public perception, its limitations include a narrow focus on Australia, potential bias in survey responses and an emphasis on ethical perceptions rather than the broader conditions that influence ethical development.

In contrast, the ETPI and RETPI indices provide a global perspective, covering countries, regions and localities. They are fully replicable and focus on the conditions that promote or inhibit ethical behaviour, providing a unique and comprehensive tool for assessing ethics globally. Unlike other indices that are limited in scope and focus, the ETPI and RETPI indices provide a robust, transparent and quantifiable framework for the study of ethics.

Having outlined the fragmented landscape of existing ethical indices and demonstrated the absence of a unified, multidimensional framework, it is important to consider the ETPI and RETPI in the context of their own developmental trajectories. These indices did not emerge fully formed, but rather evolved through successive iterations, with each iteration addressing specific methodological shortcomings and expanding the indices' analytical scope. By tracing this generational development, we can highlight both the continuity with earlier work and the novel contributions of the present study.

The results of this study support the view that institutions define the capability frontier (the ETPI layer), while public perception and engagement (the RETPI layer) determine the extent to which these capabilities are realised by the population. This can explain why a country may have strong national ethical institutions yet have regions where the ethical environment is neither perceived nor engaged with locally, thereby limiting the effectiveness of educational or economic investment.

### From Concept to Maturity: Three Generations of the Ethics Perception Indices

The development of the Ethics Perception Index (ETPI) and the Regional Ethics Perception Index (RETPI) should be understood as a cumulative, generational process rather than a single, static innovation. Each stage has addressed specific shortcomings of the previous version, while simultaneously expanding the analytical and policy relevance of the indices (see Tab. 5).

- 1) **Generation I (2022)** marked the *conceptual breakthrough*: for the first time, ethics was operationalised as a measurable, reproducible index at both national and regional levels (Shemetev, 2022). However, this first version remained essentially static and did not adequately incorporate negative factors such as natural resource depletion, which introduced a small but important bias.
- 2) **Generation II (2023)** corrected this limitation by introducing negative scaling, thereby eliminating the bias and allowing the indices to reflect sustainability more accurately. In addition, this version linked ethical development to *resilience and recovery potential*, demonstrating that moral-ethical growth is not only a normative concern but also a predictor of socio-economic stability (Shemetev & Pěluča, 2023). Nevertheless, the indices remained limited in their ability to capture time-series dynamics or to analyse groups of countries simultaneously.
- 3) **Generation III (this article, 2025)** represents the *mature stage* of development. It introduces a suite of methodological novelties:
  - ✓ dynamic **time-series analysis**, supported by interpolation and the ME-Matrix for handling missing or low-frequency data;
  - ✓ **regional adaptability** through modifiers reflecting public interest in ethics (e.g. online activity);
  - ✓ the ability to estimate **groups of countries and their regions**, rather than single nations;
  - ✓ integration of **seven established components** into a unified, transparent framework;
  - ✓ **3D modelling** of RETPI values under varying parameters, enabling scenario analysis;
  - ✓ explicit treatment of **low-frequency data** with iterative updating;
  - ✓ and, crucially, the coefficient approach for advanced measuring **ethical resilience** alongside recovery potential.

**Table 5** Evolution of ETPI/RETPI

Generation	Reference	Key Features	Limitations	Novelty/Contribution
<b>I</b>	Shemetev (2022)	First ETPI/RETPI concept; national & regional scope	Limited negative scaling; static only	Introduced ethics as measurable index
<b>II</b>	Shemetev & Pěluha (2023)	Negative scaling (NRD); resilience & recovery estimation	Lack time-series; lack group-country analysis	Corrected bias; linked ethics to resilience
<b>III</b>	This article (2025)	Time-series analysis; ME-Matrix; RETPI modifiers; group-country estimation; 3D modelling; integration of 7 components; coefficients of ethical resilience and recovery potential	—	First comprehensive, dynamic, regionally adaptable, multi-country ethical index

Source: Own work.

Taken together, these advances transform ETPI and RETPI from pioneering but preliminary tools into comprehensive, dynamic, and policy-relevant instruments. Tab. 5 summarises this generational evolution, making clear how each stage has built upon the last and how the present version offers a genuinely novel contribution to the measurement of ethical progress.

### Comparison of the Global Social Progress Index (SPI) and ETPI/RETPI Framework

It is important to acknowledge the existence of the Global Social Progress Index (SPI (Krylova et al., 2025; Social Progress Imperative, 2025b)), which has offered a thorough assessment of non-economic aspects of societal well-being since 2011. The SPI evaluates 57 indicators across three dimensions — Basic Human Needs, Foundations of Wellbeing and Opportunity — and has played a key role in shifting the focus of debate beyond GDP (Social Progress Imperative, 2025a). However, the ETPI and RETPI differ in both their conceptual focus and their methodological design (see Tab. 6).

- 1) Firstly, while the SPI aggregates a wide range of social outcomes, the ETPI and RETPI are explicitly designed to capture the ethical and moral dimensions of development. They operationalise ethics as a measurable construct rather than a by-product of social outcomes.
- 2) Secondly, the ETPI and RETPI integrate seven transparent and replicable components — corruption, economic freedom, human development,

- education, human rights, environmental performance and natural resource depletion — with clear scaling rules and reproducibility protocols.
- 3) Thirdly, unlike the SPI, the ETPI and RETPI incorporate a dynamic time-series framework and an explicit treatment of missing or low-frequency data (via interpolation and the ME-Matrix), enhancing replicability and longitudinal analysis.
  - 4) Fourthly, the RETPI introduces regional modifiers based on public engagement with ethics (e.g. Google Trends), enabling subnational differentiation and estimation of resilience and recovery potential — features absent from the SPI.

Therefore, the ETPI and RETPI complement the SPI by offering a more targeted lens on the ethical underpinnings of resilience, sustainability, and inclusive development.

**Table 6** Global Social Progress Index (SPI) vs. ETPI/RETPI Framework

Dimension	Global Social Progress Index (SPI)	ETPI / RETPI
<b>Level of analysis</b>	National level only; no sub-national differentiation.	National (ETPI) <b>and</b> regional/local/ sub-local (RETPI), enabling intra-country comparisons.
<b>Conceptual focus</b>	Broad social outcomes (basic needs, wellbeing, opportunity).	Explicitly measures <b>ethical and moral dimensions</b> (corruption, rights, freedoms, sustainability).
<b>Components</b>	57 indicators across 12 components and 3 dimensions.	7 transparent, replicable components: corruption, economic freedom, human development, education, human rights, environmental performance, natural resource depletion.
<b>Methodological transparency</b>	Complex aggregation; weighting not always easily replicable.	Fully transparent formulas; equal weighting; clear scaling rules; replicable in R/Python/Excel/Calculator.
<b>Time-series capacity</b>	Primarily cross-sectional snapshots; limited longitudinal analysis.	Designed for <b>dynamic time-series analysis</b> , with interpolation and ME-Matrix for missing/low-frequency data.
<b>Regional adaptability</b>	Not designed for sub-national or regional modifiers.	RETPI introduces <b>regional modifiers</b> (e.g. Google Trends on ethics) to capture public engagement and local variation.
<b>Resilience and recovery potential</b>	Not explicitly measured.	Explicitly integrates <b>resilience and recovery potential</b> as part of ethical development assessment.
<b>Policy relevance</b>	Useful for broad benchmarking across countries.	Useful for <b>targeted policy interventions</b> at both national, regional and local levels; highlights lagging regions/ municipalities within countries.
<b>Comparability</b>	Strong for cross-country benchmarking, but less sensitive to internal diversity.	Strong for both cross-country and <b>within-country</b> comparisons, especially in large, diverse states.

**Table 6** (continued)

<b>Subjectivism in inputs</b>	Relies heavily on <b>survey-based indicators</b> (e.g. “Have you had money stolen?”), which are perception-driven and culturally biased.	Based on <b>numerical, internationally standardised indicators</b> ; any subjectivity exists only at the level of methodological construction, not in the raw inputs.
<b>Best suited for</b>	Small or homogeneous countries where national averages reflect reality (for example, Nauru, San Marino, Malta).	Large, diverse countries and regions where national averages mask internal variation.

Source: Own work.

While the Global Social Progress Index (SPI) has made a valuable contribution by broadening the scope of measurement beyond GDP, substantial differences remain between it and the ETPI/RETPI framework. Tab. 6 provides a structured comparison. Another distinction lies in the degree of subjectivity: The SPI partially relies on survey-based indicators (e.g. the proportion of respondents reporting theft), which are inherently perception-driven. In contrast, the ETPI and RETPI are constructed from numerical, internationally standardised indicators. While no index is entirely free from methodological subjectivity — even GDP involves conventions and imputations (Shemetev & Pelucha, 2022) — the ETPI and RETPI frameworks minimise subjectivity at the input level. This makes their basic components transparent and replicable and reduces their dependence on cultural or survey biases.

### **National Culture and Ethical Perceptions: Hofstede’s Dimensions**

Perceptions and practices of ethics are not formed in isolation, but are deeply embedded in cultural contexts. Hofstede's cultural dimensions theory offers a systematic approach to understanding how national culture influences values, behaviours and ethical judgements (Hofstede, 2001; Hofstede et al., 2010, 2017). The six dimensions (Hofstede, 2001; Hofstede et al., 2010) — power distance, individualism versus collectivism, masculinity versus femininity, uncertainty avoidance, long-term versus short-term orientation, and indulgence versus restraint — offer valuable insights into cross-national differences in ethical standards (see Tab. 7).

**Table 7** The potential influence of Hofstede's cultural dimensions on ETPI/RETPI scores

Hofstede Dimension	If the dimension rises (higher value)	If the dimension falls (lower value)	Explanation of influence on ETPI/RETPI
<b>Power Distance (PDI)</b>	Greater acceptance of hierarchy; tolerance of nepotism and patronage → likely <b>lower ETPI/RETPI</b> (weaker corruption control, weaker rights).	More egalitarian relations; stronger accountability → likely <b>higher ETPI/RETPI</b> .	High PDI societies normalize unequal power, undermining transparency and fairness. Low PDI fosters ethical governance and trust.
<b>Individualism vs. Collectivism (IDV)</b>	Stronger individual rights, personal responsibility → <b>higher ETPI/RETPI</b> (better human rights, education).	Group loyalty, in-group favoritism → <b>lower ETPI/RETPI</b> (higher corruption, weaker fairness).	Individualism aligns with universal rights and accountability; collectivism can justify favoritism or informal networks.
<b>Masculinity<sup>1</sup> vs. Femininity<sup>2</sup> (MAS)</b>	Competitive, achievement-oriented culture → may raise economic freedom but tolerate aggressive/unethical practices → <b>mixed effect</b> .	Cooperative, equity-oriented culture → <b>higher ETPI/RETPI</b> (better environment, social ethics).	Masculine cultures prioritize competition; feminine cultures emphasize care, sustainability, and fairness.
<b>Uncertainty Avoidance (UAI)</b>	Strong reliance on rules; may reduce corruption but also create rigid bureaucracies → <b>ambiguous effect<sup>3</sup></b> .	Flexible, trust-based norms; may encourage innovation but also informal practices → <b>ambiguous effect<sup>4</sup></b> .	High UAI <sup>3</sup> can strengthen legal frameworks but risk inefficiency; low UAI <sup>4</sup> can foster trust or, conversely, tolerance of informality.
<b>Long-Term Orientation (LTO)</b>	Focus on sustainability, education, intergenerational responsibility → <b>higher ETPI/RETPI</b> (better environment, human development).	Short-term focus, immediate gains → <b>lower ETPI/RETPI</b> (resource depletion, weaker sustainability).	Long-term orientation aligns with sustainability and ethical foresight; short-termism undermines them.
<b>Indulgence vs. Restraint (IVR)</b>	Greater freedom of expression, openness → <b>higher ETPI/RETPI</b> (human rights, education).	Restrained, conformist culture → <b>lower ETPI/RETPI</b> (less pluralism, weaker rights).	Indulgence supports rights and freedoms; restraint emphasizes control and conformity, limiting ethical pluralism.

Source: Own work based on RETPI/ETPI theories and Hofstede's works (Hofstede, 2001; Hofstede et al., 2010).

#### Interpretations:

- ✓ Power Distance (PDI): In societies with a high PDI, hierarchical authority is widely accepted, which can lead to the normalisation of practices such as nepotism and patronage. This can undermine anti-corruption norms and lower ETPI scores. Conversely, low power-distance cultures tend to emphasise accountability and transparency, thereby reinforcing ethical standards.

- ✓ Individualism vs. collectivism (IDV): Individualistic cultures prioritise personal responsibility and rights, often aligning with stronger human rights protections and higher ETPI values. Collectivist cultures, however, may emphasise loyalty to in-groups, which can sometimes justify practices such as favouritism or informal networks, thereby affecting corruption and fairness indicators.
- ✓ Masculinity vs. femininity (MAS): Masculine cultures emphasise competition and achievement, which may correlate with higher economic freedom, but also with tolerance of aggressive business practices. In contrast, feminine cultures emphasise care, equity and quality of life, aligning with stronger environmental and social ethics.
- ✓ Uncertainty avoidance (UAI): High uncertainty-avoidance societies rely heavily on formal rules and regulations. While this can strengthen legal frameworks, it may also lead to rigid bureaucracies that tolerate inefficiency or corruption. Conversely, low uncertainty-avoidance cultures may rely more on trust and informal norms, which can either strengthen or weaken ethical practices depending on the context.
- ✓ Long-Term vs. Short-Term Orientation (LTO): Long-term oriented cultures prioritise sustainability, education and intergenerational responsibility, which directly supports higher scores in ETPI components such as human development and environmental performance. Short-term oriented cultures may prioritise immediate gains, often at the expense of sustainability.
- ✓ Indulgence vs. Restraint (IVR): Indulgent cultures emphasise freedom of expression and personal choice, which can promote human rights and education. In contrast, restrained cultures may emphasise conformity and control, which can limit ethical pluralism, but also reduce excesses.

Notes on the nuances of Hofstede's original models, and on how these can be interpreted within the ETPI/RETPI framework.

- 1) The original Hofstede's works consider Masculinity to be not related to a country's wealth or economic development. In masculine cultures, the focus is on achievement, performance and ego, with work playing a central role in life (Hofstede, 2001). A preference for advancement and earnings often defines this culture (Hofstede, 2001). While the ETPI concept suggests that MAS may 'raise economic freedom', implying a link to one of its input components, the Hofstede's works highlight that MAS is generally unrelated to wealth (Hofstede, 2001). Interpreting the effect as mixed is a simplification, as the core issue is prioritising performance over relationships (Hofstede, 2001).
- 2) The original Hofstede's works consider Feminine cultures favour welfare societies and cooperation, focusing on quality of life and relationships (Hofstede et al., 2010).

Feminine cultures are associated with supporting those in need (welfare and development cooperation) and preserving the environment (Hofstede, 2001). This generally aligns with the ETPI's sustainability and social ethics components.

- 3) At the core of high UAI, according to the original Hofstede's works, is emotional anxiety in the face of the unknown (Hofstede, 2001). This anxiety gives rise to a desire for formal rules and structures (Hofstede, 2001). This manifests as xenophobia, nationalism, and a belief in absolute truth and expertise (Hofstede, 2001). The preference for precision and formalised management stems from an emotional need for certainty, rather than mere bureaucratic convenience (Hofstede et al., 2010).
- 4) The original Hofstede works suggest that a low UAI indicates tolerance of ambiguity, chaos and novelty (Hofstede, 2001). Such cultures tend to be less expressive of emotions, exhibit lower levels of anxiety and rely more on generalists and common sense (Hofstede, 2001). This attitude fosters a greater willingness to take risks with an unknown outcome (Hofstede et al., 2010).

This UAI ambiguity (see Tab. 7) noted in the ETPI description arises because a high UAI score emphasises strict rules, which are beneficial for governance and anti-corruption efforts (Hofstede, 2001). However, it also fosters a perception of low political competence and low trust in the legal system (Hofstede, 2001). It is also associated with more political violence (Hofstede, 2001), which undermines ethical governance. By focusing predominantly on 'rules' (legal frameworks and bureaucracy), the ETPI framework overlooks the fundamental psychological root of UAI (anxiety) and its broad cultural impact on trust, political competence, and tolerance.

Nevertheless, models are designed to simplify reality without compromising their quantitative or analytical capabilities. In modern physics, for instance, quantum mechanics refined the initial atomic model by introducing concepts such as wave–particle duality and probabilistic electron distributions (Heisenberg, 1927; Schrödinger, 1926). However, despite these advances, simpler binary atomic models remain indispensable in chemistry, providing clear, actionable predictions without the complexity of quantum mathematics (Atkins et al., 2018; Atkins & de Paula, 2006). Similarly, simplified models of ethical measurement, such as ETPI and RETPI, although abstractions of a more complex reality, remain valid and valuable tools. By balancing methodological rigour with accessibility, they enable systematic comparisons to be made across countries and regions, offering insights that are both analytically robust and practically interpretable.

Hofstede's framework can also confirm the need for advanced methodological approaches for the regional/local RETPI and national ETPI indices, which already exist in their third generation. For instance, the ETPI comprises seven components, such as the Corruption

Perceptions Index (CPI) and the Human Development Index (HDI). Hofstede's work shows that although cultural dimensions correlate strongly with these kinds of aggregate societal statistics, individual attitudes or behaviours within those countries are often uncorrelated or even inversely correlated with national aggregate scores (Hofstede, 2001). Therefore, while it is appropriate to use culturally derived dimensions to interpret the ETPI at the national level, applying these abstract relationships to regional or local performance measures should be based on local data to a significant extent, in order to avoid the risk of misinterpreting regional differences by using correlations established only at the national level. Since the RETPI already uses local data, which can differ from the national average, it is a useful tool for academia and policymakers that meets Hofstede's methodological critique. Moreover, RETPI is the only ethics measurement index known to work on three levels simultaneously: national, regional and local. This increases the value of the tool.

By integrating Hofstede's framework, ETPI and RETPI can be interpreted as reflections of both institutional and socio-economic conditions, as well as outcomes shaped by deep-seated cultural orientations. For example, the consistently high ETPI scores of Scandinavian countries can be linked to their low power distance, strong individualism balanced with social equity and long-term orientation — cultural traits that reinforce ethical governance and sustainability. Conversely, regions with high power distance and collectivist orientations may struggle to reduce corruption or strengthen human rights, even when economically developed. Closer integration of the ETPI/RETPI framework with Hofstede's works could pave the way for future studies in this area.

## CONCLUSION

### **Achieving the core objective:**

This research aims to develop the third generation of the Ethics Perception Index (ETPI) and the Regional Ethics Perception Index (RETPI), based on previous versions (Shemetev, 2022; Shemetev & Pělucha, 2023). While the first generation established the conceptual framework and the second generation introduced negative scaling and resilience estimation, this study incorporates dynamic time-series analysis, robust missing-data treatment and a methodology for analysing enhanced resilience and recovery potential, as well as regional modifiers. This embeds ethical and moral growth into broader development assessments. We believe that this goal has been achieved, since the third-generation indices introduced provide a transparent and replicable framework for assessing ethical standards at national and regional levels. The innovative dynamic component enables time-series analysis, allowing ethical progress to be

tracked over time and overcoming the limitations of previous static, single-point-in-time analyses.

**Key outputs:**

This paper's key outputs are the third-generation ETPI and RETPI. These retain the seven established measurable components — economic freedom, corruption, education, human development, human rights, environmental sustainability and natural resource depletion — but extend them with methodological innovations. These innovations include a dynamic framework for time-series analysis, the ME-Matrix for handling missing and low-frequency data, a coefficient approach for estimating resilience and recovery potential, and the ability to estimate groups of countries and their regions. Together, these advances provide a comprehensive and replicable perspective on societal progress that transcends traditional economic indicators.

These indices provide a holistic view of societal progress by going beyond traditional economic measures to include ethical dimensions that are critical to understanding the sustainability and fairness of development processes. In addition, the research presents a dynamic methodology capable of dealing with missing data, thereby enhancing the utility of these indices in longitudinal studies.

**Benefits for academia:**

The third-generation ETPI and RETPI make a distinct contribution to interdisciplinary research in ethics, economics and development studies. Unlike earlier, primarily static versions, the present indices enable scholars to trace ethical trajectories over time, evaluate resilience and recovery potential following shocks, and conduct comparative analyses across multiple regions and countries. This methodological transparency opens up new avenues for empirical research and strengthens the connection between moral philosophy and socio-economic development.

By bridging ethical considerations with quantitative metrics, this research opens new avenues for exploring the intersection of moral philosophy and socio-economic development. It also provides a robust tool for comparative regional studies, enhancing the ability of scholars to examine ethical differences in different socio-economic contexts. Furthermore, the indices lay the groundwork for future empirical studies that aim to explore the causal relationships between ethical development and economic growth.

**Benefits for policy makers:**

The practical implications of this third-generation framework can be significant for policymakers. As well as offering a snapshot of ethical conditions, ETPI and RETPI now

enable the monitoring of ethical resilience and recovery potential. This provides valuable insights into how societies withstand and adapt to crises. This dynamic capacity allows for more targeted, context-sensitive interventions in areas such as inequality, corruption and environmental sustainability, which are often overlooked by traditional economic indicators. The ability to assess ethical development at both national and regional levels allows for targeted and contextually relevant interventions, thereby improving the effectiveness of policies aimed at promoting inclusive and sustainable growth.

### **Limitations of the research:**

Despite these advances, limitations remain. Some ethical indicators remain subjective to a certain extent and vary across cultural contexts. Furthermore, data availability continues to limit coverage in certain regions. Although the introduction of imputation techniques (e.g. linear interpolation and ME-Matrix) has improved robustness compared to earlier versions, the accuracy of the indices may still be affected by incomplete or biased data.

### **Avenues for future studies:**

Future studies should refine the components of the ETPI and the RETPI in order to ensure cultural adaptability and test alternative weighting schemes. The set of regional modifiers should also be expanded. There is also potential to conduct a more in-depth analysis of the causal links between ethical development, resilience, and socio-economic outcomes. As more data becomes available, particularly from under-represented regions, longitudinal studies can validate the indices further. Finally, extending the framework to encompass global ethical challenges, such as climate change and digital governance, would establish ETPI and RETPI as benchmarks for integrating ethics into sustainable development.

This research is an important step towards integrating ethical considerations into the broader discourse on social progress, providing tools that are both theoretically sound and practically applicable.

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# Annex A. The Ethics Perception Index, 1995-2024

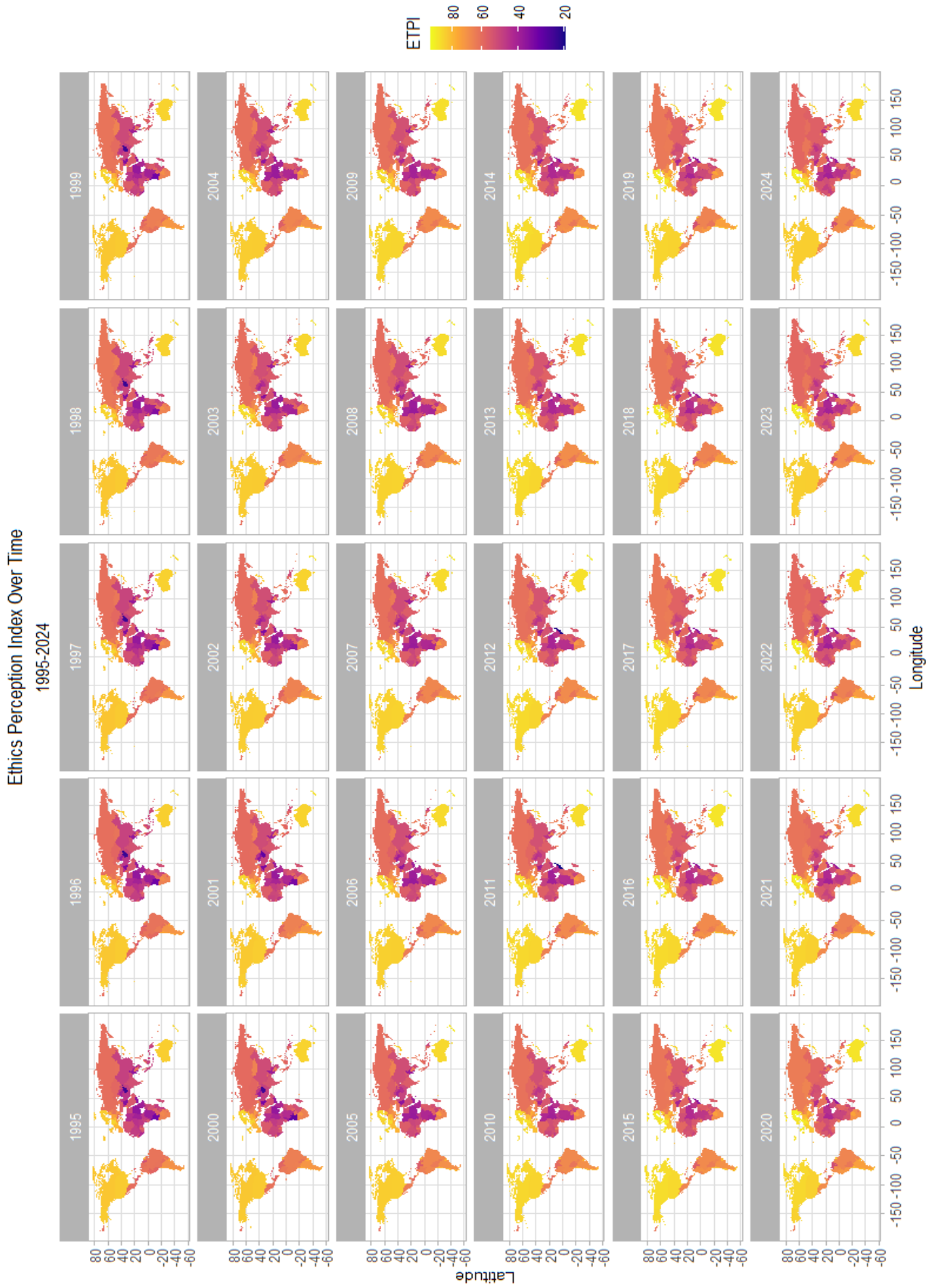


Table A1: Ethics Perception Index (ETPI) for Countries (1995-2024)

ISO3	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
AFG	23,8	23,3	23,4	23,5	23,7	23,8	28,5	42,8	43,6	44,0	44,3	44,5	44,9	45,0	45,4	45,7	45,8	46,0	46,1	46,3	46,3	47,0	49,2	51,4	51,3	52,9	46,4	46,4	45,6	45,6
AGO	31,0	31,0	31,3	33,9	31,0	28,6	32,3	36,6	39,8	40,7	40,6	41,7	41,6	41,1	44,7	43,8	43,5	44,4	45,5	46,7	48,9	48,8	49,3	49,8	52,3	54,1	53,0	53,4	53,4	53,6
ALB	64,1	65,0	65,4	66,1	66,7	65,8	65,1	64,8	64,8	65,3	65,8	66,7	67,8	69,4	70,5	71,7	72,0	72,7	73,0	73,2	73,6	74,1	73,6	73,3	74,0	73,8	73,3	73,6	73,4	73,3
ARE	62,4	62,2	62,9	64,2	64,0	63,4	64,3	65,3	64,8	63,3	62,7	62,1	62,9	62,5	64,4	64,4	63,1	63,9	64,9	65,9	68,6	68,7	72,0	73,6	75,0	75,6	73,9	72,7	72,8	72,8
ARG	69,7	71,0	71,0	70,9	71,4	71,6	72,0	71,3	70,3	70,0	69,6	69,7	69,9	69,9	70,1	70,0	70,3	70,2	70,5	70,4	70,2	71,1	72,5	73,1	74,1	74,1	73,2	72,8	73,3	73,1
ARM	64,4	64,6	65,4	66,3	67,4	67,9	68,5	68,1	68,0	68,3	68,5	68,9	68,2	67,4	69,5	70,0	70,3	70,6	71,1	71,8	71,5	71,6	73,0	73,1	74,5	75,7	75,1	73,8	73,0	73,0
AUS	85,2	85,4	86,0	86,1	86,4	86,4	86,4	86,5	87,1	87,3	87,8	88,0	88,3	88,6	89,4	89,2	89,0	89,7	90,2	90,5	91,0	90,9	90,3	90,1	90,3	90,5	88,7	88,3	87,8	88,1
AUT	82,6	82,8	82,4	82,7	82,7	83,7	83,7	83,8	83,7	84,0	84,3	84,6	84,8	84,8	85,2	85,5	85,9	86,1	86,4	86,9	87,3	87,2	87,1	87,2	87,4	87,5	87,4	86,9	86,6	86,2
AZE	51,2	51,4	53,4	57,3	56,1	55,3	57,3	58,5	56,2	55,4	53,6	53,0	54,0	53,4	56,4	57,1	56,7	57,3	58,7	59,2	60,4	59,7	59,5	57,0	59,0	60,6	58,3	55,4	55,3	55,4
BDI	39,7	38,9	39,8	39,3	40,7	41,1	40,9	40,7	39,1	41,6	42,8	44,1	42,3	41,8	42,6	42,0	41,7	42,4	41,8	41,9	41,5	40,4	40,7	40,6	41,0	41,4	42,0	41,0	41,0	40,4
BEL	82,0	82,3	82,2	82,3	82,2	82,6	83,1	83,9	84,2	84,7	85,2	86,5	86,9	86,8	87,2	86,7	86,8	87,1	87,3	87,7	88,0	88,0	88,3	88,0	88,1	88,4	88,2	88,2	87,8	87,5
BEN	54,3	54,6	55,9	56,2	56,9	57,4	57,8	57,6	57,4	57,8	57,7	58,0	58,0	58,1	58,1	58,3	58,5	58,6	59,2	59,5	59,7	59,8	60,2	59,5	59,1	58,6	59,2	59,7	59,5	59,1
BFA	46,6	46,8	47,5	48,2	49,9	50,9	51,2	51,5	51,3	51,4	51,3	51,2	50,5	50,7	51,3	51,6	51,8	52,4	53,3	53,6	54,2	55,0	55,8	56,2	56,3	55,8	54,3	54,0	51,8	51,2
BGD	49,1	51,0	51,1	51,8	51,8	51,8	52,4	52,3	52,3	52,0	51,8	52,6	51,3	51,1	51,8	52,5	52,8	52,9	52,5	52,7	53,5	53,7	54,2	54,1	54,0	54,9	55,0	54,8	55,0	55,0
BGR	67,7	67,9	67,9	68,0	68,4	68,9	69,8	72,0	72,5	73,2	73,7	73,7	73,5	74,0	74,8	74,9	75,2	75,5	76,1	76,6	76,2	76,0	76,0	75,8	76,5	76,6	76,4	77,1	76,8	76,7
BHR	58,0	57,7	58,1	59,4	59,0	60,9	63,1	64,9	65,3	64,0	62,3	62,2	61,7	61,0	62,3	62,0	57,8	58,8	59,5	60,4	63,5	63,1	60,9	61,2	63,4	64,0	63,7	62,7	62,9	63,0
BHS	75,1	75,7	75,9	76,5	76,7	76,6	76,8	76,7	76,9	76,8	77,2	77,4	78,0	77,3	77,5	76,3	76,9	77,0	77,5	77,4	76,9	78,0	76,6	77,2	77,5	77,6	77,8	78,9	77,8	77,8
BIH	55,4	55,8	55,5	55,8	56,1	60,2	59,0	59,3	60,2	60,7	61,4	63,0	63,6	63,9	64,6	64,9	65,1	66,1	67,0	68,1	68,7	69,2	69,6	69,3	69,6	69,5	69,6	69,5	69,4	69,3
BLR	65,1	63,2	63,9	63,9	61,2	63,1	64,8	64,2	63,5	63,8	64,4	64,2	64,3	64,1	64,2	64,5	64,6	65,2	65,7	66,3	66,6	68,3	70,7	70,5	70,6	65,3	63,8	62,2	62,0	61,6
BOL	62,2	64,1	64,6	66,2	65,7	65,5	66,6	66,1	65,8	65,6	64,1	63,1	62,6	62,6	63,8	62,7	62,3	62,8	62,9	63,2	64,4	64,5	64,7	63,8	62,6	63,2	62,8	63,0	62,9	62,9
BRA	62,4	62,1	63,2	63,4	65,0	65,3	65,7	66,1	66,8	66,9	67,5	67,7	67,2	67,4	68,1	67,8	68,0	68,4	69,0	68,8	68,2	68,3	67,2	66,4	66,3	66,8	65,9	65,9	68,4	68,4
BRB	76,9	77,0	77,5	78,1	78,0	78,2	78,0	78,1	77,4	77,6	78,1	78,8	79,1	79,3	79,3	78,6	78,6	78,7	78,9	79,3	78,6	78,1	78,0	79,0	79,4	79,3	80,0	81,1	80,9	80,4
BRN																				69,7	71,6	72,8	73,7	71,2	70,4	72,0	70,0	69,6	69,8	69,9
BTN	59,6	59,7	60,0	60,3	60,4	60,9	61,1	61,4	61,9	63,0	63,2	63,3	63,4	64,7	64,4	63,6	63,5	63,4	63,7	64,5	65,1	65,7	66,5	68,0	69,0	69,4	68,1	68,3	68,3	67,8
BWA	68,0	69,1	68,9	69,7	69,9	70,2	70,5	70,4	71,5	72,9	73,2	72,3	73,2	72,2	73,3	72,7	72,4	72,4	72,7	73,5	74,2	75,3	75,3	75,1	75,7	75,5	73,5	74,2	74,3	74,7
CAF	46,5	46,6	46,5	46,5	47,2	47,1	47,5	47,9	48,1	47,8	47,9	47,4	46,9	46,2	46,9	47,1	47,1	46,4	44,4	45,4	46,0	45,8	47,7	48,3	48,3	49,0	49,1	47,9	46,7	46,4
CAN	83,3	83,5	83,1	83,3	83,6	83,6	84,0	84,8	84,7	85,0	85,0	85,6	85,8	86,2	87,1	87,3	87,6	88,2	88,4	88,5	88,8	88,1	87,9	87,5	86,9	87,5	86,5	86,0	85,4	85,2

ISO3	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
CHE	86,4	86,5	87,0	87,3	87,5	87,4	87,1	87,8	87,9	88,1	88,1	88,4	88,8	89,3	89,6	90,3	90,7	90,9	91,1	91,6	91,7	91,8	92,0	92,3	92,4	92,3	92,4	92,5	92,4	92,2
CHL	74,5	75,3	76,1	76,5	76,5	76,7	77,3	78,5	78,7	78,7	79,4	78,3	78,2	79,1	79,7	79,0	79,2	80,1	81,3	81,8	82,1	81,8	81,9	81,4	81,7	81,4	79,7	80,0	79,5	79,6
CHN	48,6	49,1	49,6	50,3	50,9	51,6	51,6	52,3	52,5	52,1	52,2	52,0	51,8	51,7	53,0	52,6	52,9	53,9	54,4	54,9	56,0	56,7	58,1	57,9	58,7	59,1	59,3	57,4	57,4	57,4
CIV	53,4	53,7	54,2	54,6	54,7	54,6	55,3	55,9	56,4	57,0	56,7	56,4	56,3	56,2	57,3	57,1	56,7	56,3	56,8	57,7	57,6	57,7	58,6	58,3	58,7	57,8	57,8	58,2	58,1	57,8
CMR	49,5	48,6	48,2	49,6	50,1	49,9	52,6	52,7	52,9	53,0	53,1	53,3	53,7	53,8	55,1	54,9	55,2	55,6	56,0	56,1	56,3	56,0	55,0	55,2	55,9	56,4	56,6	56,5	56,0	56,3
COD	38,5	38,4	38,5	39,9	39,8	43,8	42,4	42,5	41,0	42,5	42,7	42,9	42,7	42,5	43,3	44,2	44,0	44,6	44,4	44,4	46,2	46,5	47,4	48,2	50,6	49,7	46,1	46,1	44,6	44,5
COG	45,6	45,5	40,8	42,0	41,9	38,4	40,9	42,1	43,9	44,1	43,1	41,7	42,9	42,6	45,3	43,2	41,8	44,4	46,0	47,4	49,3	48,6	46,6	44,6	45,3	48,2	48,2	47,8	47,9	47,8
COL	62,3	62,8	63,5	63,7	63,4	63,5	64,4	64,0	65,2	64,6	64,9	64,9	65,4	65,3	66,2	67,1	67,8	68,0	68,8	69,2	70,0	70,3	70,4	69,5	68,8	69,4	68,5	69,9	69,6	69,0
COM	50,3	50,4	50,3	50,4	50,7	50,7	51,0	51,4	51,6	51,7	52,1	52,2	53,7	54,3	54,7	55,3	56,0	56,7	57,4	58,1	58,3	57,6	58,8	58,9	57,7	56,9	56,7	55,7	56,1	55,9
CPV	60,2	60,4	60,2	61,3	63,0	62,5	62,2	63,3	64,0	62,5	61,4	62,2	63,4	59,5	64,6	63,1	62,5	65,0	67,2	68,8	69,1	69,7	67,1	67,3	67,9	67,9	66,9	67,9	67,7	67,3
CRI	71,8	71,7	71,9	72,2	72,7	73,4	73,8	74,0	74,1	73,8	74,0	74,1	74,0	74,3	74,9	75,0	75,8	76,5	76,6	77,1	77,8	78,3	78,0	76,9	77,3	77,7	77,5	77,0	77,1	77,3
CUB	54,0	54,4	54,6	55,0	55,4	55,6	55,9	57,0	58,2	59,0	59,7	59,3	59,3	59,9	60,3	59,4	59,5	59,5	59,7	60,3	60,6	60,1	61,8	61,5	61,1	60,7	59,9	60,3	59,8	60,1
CYP	74,4	74,6	74,9	75,3	75,5	76,0	77,1	78,0	78,3	79,2	79,3	79,7	80,0	80,6	81,2	81,4	82,0	82,3	82,4	82,5	82,7	82,1	82,3	82,9	83,0	83,2	82,8	82,9	82,8	82,8
CZE	78,9	79,4	79,8	79,9	80,4	78,9	79,1	78,7	78,9	79,0	79,1	79,6	79,8	80,0	80,8	81,1	81,4	81,7	82,4	83,1	83,9	83,7	83,7	84,0	83,5	82,9	82,8	83,8	83,5	83,2
DEU	86,7	86,9	87,0	86,8	87,2	87,2	88,0	88,3	88,4	88,9	88,7	89,1	89,2	89,3	89,7	89,9	90,2	90,2	90,5	90,7	91,0	90,9	90,8	90,8	91,1	91,0	90,8	91,3	90,9	90,6
DJI	46,7	46,8	47,0	47,2	47,6	47,5	48,2	48,1	47,5	47,8	48,0	48,0	48,2	48,1	48,5	48,7	49,7	50,0	50,3	51,5	52,2	52,1	50,8	51,1	51,7	52,4	53,4	53,3	53,4	53,3
DMA	70,3	70,3	70,4	70,4	70,4	70,4	70,4	71,0	71,0	70,9	70,8	70,7	70,2	70,9	71,2	71,4	71,7	71,9	72,5	73,0	73,7	74,3	72,4	73,2	72,8	72,1	70,7	71,0	72,0	70,9
DNK	86,9	87,2	87,5	87,9	88,4	88,9	89,4	90,3	90,9	91,5	93,8	91,7	91,9	92,2	92,3	92,3	93,4	95,0	94,0	95,1	95,8	95,8	95,3	95,4	95,2	95,4	95,5	96,0	95,9	95,9
DOM	59,5	60,4	60,8	61,8	62,0	62,5	62,8	63,0	63,2	63,4	65,5	66,1	66,3	67,1	67,6	68,1	68,1	68,1	67,9	68,5	69,0	69,5	69,5	69,6	68,9	69,6	69,6	70,2	70,1	70,2
DZA	53,1	52,8	53,3	54,7	56,6	55,7	56,9	58,0	57,5	58,0	56,3	56,6	57,1	57,3	58,7	58,6	57,6	57,8	58,0	58,5	59,3	59,3	57,8	56,9	57,8	58,1	55,8	54,4	54,1	54,2
ECU	62,9	63,3	64,1	65,1	65,4	64,3	65,3	65,3	65,3	65,3	64,5	64,2	64,7	64,1	65,2	64,2	63,3	64,2	64,1	64,6	66,3	66,4	67,5	68,5	68,9	70,2	69,5	70,0	69,1	69,1
EGY	50,4	51,8	52,9	53,5	53,8	52,5	52,9	53,4	53,4	53,4	52,9	52,6	53,2	53,8	54,9	55,2	56,4	57,3	54,5	54,4	55,5	56,0	55,0	55,8	56,6	57,4	57,3	56,3	56,4	56,4
ERI	43,8	43,9	44,0	43,5	43,7	43,3	42,6	42,4	42,3	42,4	42,1	42,1	41,6	41,7	42,1	41,7	38,2	38,0	37,9	38,2	37,3	38,1	38,0	39,0	38,6	38,2	39,1	38,7	38,6	38,6
ESP	75,9	75,8	76,1	76,8	77,4	77,7	78,6	78,9	79,1	79,3	79,3	79,8	80,1	80,5	81,1	81,8	82,6	82,9	83,4	83,0	82,7	82,9	81,9	82,3	83,4	83,4	83,9	83,8	83,2	82,9
EST	77,3	78,1	79,2	80,6	81,1	81,2	82,7	83,5	83,9	84,3	85,6	85,7	86,2	86,0	86,3	86,2	86,1	86,0	86,3	86,1	86,6	86,8	87,3	87,8	88,5	88,8	88,8	89,2	88,9	88,8
ETH	39,1	40,2	40,8	40,3	41,8	42,2	41,9	40,9	38,6	41,0	41,9	42,7	43,3	43,9	44,7	45,0	44,9	45,7	45,4	45,6	46,2	46,6	47,4	48,5	49,8	50,6	50,8	49,9	48,8	48,8
FIN	84,8	85,2	85,8	85,9	86,8	87,4	88,5	89,4	89,4	88,6	88,8	89,0	89,4	89,8	90,0	90,1	90,6	90,9	92,2	91,8	92,7	92,3	92,5	92,9	94,4	94,4	94,9	95,2	95,0	94,8
FJI	66,6	67,1	67,1	67,0	67,0	66,7	66,7	66,5	66,2	66,2	65,8	65,4	65,7	66,3	67,3	67,5	67,8	67,9	68,5	68,9	69,1	68,8	69,8	69,4	69,2	69,0	68,5	67,4	68,8	68,8

ISO3	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
<b>FRA</b>	80,0	80,2	79,8	79,9	80,3	79,7	79,8	79,9	80,2	80,8	81,2	81,5	82,5	83,1	83,1	83,7	84,1	84,1	84,5	84,8	84,9	84,8	85,2	85,6	85,2	85,2	85,5	85,7	85,4	85,2
<b>GAB</b>	56,1	55,8	56,3	58,8	58,2	54,2	56,4	57,6	59,6	59,5	57,9	58,5	60,4	60,2	63,0	62,6	62,4	62,1	63,9	64,4	65,6	66,0	65,3	65,2	65,9	66,3	65,6	65,1	64,9	65,0
<b>GBR</b>	83,8	83,8	84,1	84,7	85,3	85,8	86,0	86,4	86,4	86,9	87,4	87,5	87,6	87,8	88,5	88,4	88,0	88,1	89,5	90,1	92,2	92,6	93,1	93,0	92,8	92,5	92,7	91,2	90,8	90,6
<b>GEO</b>	68,5	68,6	69,1	69,3	70,1	70,6	71,9	71,4	70,0	71,5	71,9	72,5	73,0	72,5	72,5	72,6	73,3	73,3	75,4	75,6	77,1	78,0	78,4	79,8	79,3	79,4	79,0	78,5	77,9	77,8
<b>GHA</b>	58,9	59,3	59,6	59,9	61,0	60,8	61,1	61,5	61,6	62,8	63,3	64,0	64,4	64,7	65,0	65,8	64,5	64,0	64,3	64,3	64,2	63,7	61,5	61,8	62,7	63,7	62,6	62,9	62,5	62,2
<b>GIN</b>	43,7	43,8	43,3	45,1	45,2	44,9	45,1	44,4	45,0	45,4	44,5	44,5	45,3	44,7	44,2	47,0	46,4	46,6	47,3	47,9	48,5	49,3	47,7	49,1	50,7	49,0	48,5	47,7	47,4	47,4
<b>GMB</b>	45,7	46,3	46,9	47,3	47,1	46,9	47,5	47,7	47,2	47,7	47,9	48,2	48,5	48,6	48,6	48,5	48,7	48,9	48,8	49,1	49,5	49,4	57,0	59,2	59,3	60,0	60,7	60,4	60,4	60,5
<b>GNB</b>	42,2	42,5	42,7	41,3	43,4	45,4	47,4	48,0	47,2	47,6	48,1	48,3	47,6	48,1	47,8	48,4	49,8	50,6	51,5	51,5	51,9	52,1	53,4	54,4	55,3	55,1	55,8	53,5	53,2	52,9
<b>GNQ</b>	36,3	33,3	32,8	34,3	33,2	30,1	32,0	32,2	33,5	33,9	39,5	40,1	41,4	42,0	45,4	44,2	44,7	44,7	46,2	48,1	49,6	50,7	50,2	48,4	48,6	51,2	50,3	49,9	50,6	50,5
<b>GRC</b>	73,1	73,1	73,3	74,0	74,2	74,6	75,4	75,5	75,8	76,3	76,9	77,7	77,2	77,7	78,2	78,8	78,5	77,9	77,8	78,3	78,6	77,9	79,1	79,4	80,4	81,0	80,7	81,5	80,5	80,3
<b>GTM</b>	50,2	51,7	52,7	53,4	54,2	57,0	57,3	57,1	57,4	57,3	57,4	57,7	58,5	59,1	59,5	60,1	60,5	60,5	60,5	61,3	59,7	59,7	60,0	60,2	60,1	59,9	59,7	58,9	58,8	58,7
<b>GUY</b>	50,9	52,5	54,0	55,8	56,0	55,8	57,0	58,0	57,5	58,0	59,4	61,9	61,3	60,9	60,6	60,4	60,8	61,4	62,1	62,8	64,4	64,4	66,4	67,5	67,6	67,2	63,5	63,8	63,4	63,5
<b>HKG</b>	79,2	79,9	79,7	79,9	80,3	80,8	81,4	81,6	81,8	82,1	82,4	82,8	83,9	84,5	84,6	84,7	85,0	85,1	85,0	84,9	84,9	84,9	85,2	85,0	84,4	83,5				
<b>HND</b>	56,6	56,6	56,7	56,7	57,3	57,7	58,0	58,5	59,0	58,4	58,2	58,9	59,2	59,4	57,8	59,1	59,9	60,3	61,1	60,9	61,2	61,2	60,9	62,0	62,0	62,0	61,3	61,9	61,9	61,9
<b>HRV</b>	64,2	66,2	66,4	67,8	69,0	71,9	72,1	72,5	73,0	73,4	73,4	73,9	73,9	74,1	74,7	76,1	76,9	77,5	78,0	78,5	79,6	79,0	79,2	79,6	79,3	79,5	80,1	81,5	81,3	81,4
<b>HTI</b>	50,0	49,9	51,3	51,6	51,8	51,7	51,7	51,5	52,1	52,2	52,1	52,8	54,0	53,7	54,2	53,7	54,9	55,0	54,8	55,1	55,3	55,7	54,8	55,4	54,8	54,4	54,3	53,6	53,4	53,2
<b>HUN</b>	73,1	73,6	73,8	74,5	75,2	76,3	76,6	76,8	76,8	76,9	77,9	78,0	78,2	79,0	79,3	79,4	79,6	80,0	81,3	81,2	79,5	78,3	77,4	77,1	76,5	76,6	76,5	76,5	75,9	75,5
<b>IDN</b>	48,8	50,1	50,8	52,7	56,1	58,3	58,5	59,6	60,1	59,2	59,2	59,6	59,6	59,4	60,7	61,5	61,4	62,0	62,5	63,2	64,3	64,8	65,2	65,4	66,2	65,4	65,2	64,8	64,4	64,4
<b>IND</b>	52,7	53,3	54,0	54,2	54,4	54,1	54,6	55,2	55,7	55,8	56,4	56,3	56,7	56,4	56,9	56,8	57,1	57,6	58,1	58,1	57,8	58,3	57,6	58,1	57,6	57,6	58,1	57,6	57,2	57,2
<b>IRL</b>	79,3	79,7	80,7	82,3	82,6	83,1	84,2	84,5	85,1	85,7	86,2	86,9	87,4	88,0	88,2	88,7	88,3	88,3	88,4	88,7	89,0	88,7	88,7	89,2	89,4	89,2	89,7	90,4	90,4	90,5
<b>IRN</b>	45,8	46,2	47,6	49,7	49,3	48,1	49,8	50,4	51,6	50,6	49,5	48,6	49,6	49,2	51,2	50,6	50,8	52,6	52,6	52,5	54,7	55,9	56,5	53,5	54,1	54,0	52,3	51,5	51,5	51,3
<b>IRQ</b>	34,4	32,7	33,7	33,2	33,6	32,0	32,5	33,1	34,9	36,3	35,7	36,2	39,0	39,2	42,1	41,6	39,9	39,6	39,5	38,7	40,5	42,0	41,5	41,0	41,9	43,7	42,1	42,8	42,7	42,7
<b>ISL</b>	83,9	84,1	84,5	85,0	85,1	85,9	86,0	86,4	86,9	86,8	87,9	87,9	88,0	87,8	87,8	88,4	88,0	88,7	89,3	89,6	89,6	89,8	90,1	90,3	90,5	90,0	90,3	90,2	89,4	89,2
<b>ISR</b>	74,9	75,2	75,7	76,8	77,2	76,7	76,8	77,3	76,6	76,5	77,4	78,1	78,8	79,0	79,7	79,8	79,6	79,3	79,4	79,9	80,4	81,1	80,8	81,0	81,2	81,7	81,7	81,5	81,1	81,3
<b>ITA</b>	73,3	73,5	73,4	73,9	74,5	74,9	75,3	75,7	76,0	76,4	76,9	76,9	77,3	77,5	77,5	78,0	78,0	77,7	77,7	77,6	77,9	78,5	79,7	80,5	81,0	80,9	81,9	82,2	81,7	81,3
<b>JAM</b>	66,0	66,3	66,6	66,8	66,6	67,0	67,4	67,5	68,0	68,8	69,2	69,4	69,7	70,6	71,4	72,1	72,1	72,4	72,1	71,9	72,4	72,0	73,2	72,8	72,8	72,9	72,9	72,7	72,4	72,4
<b>JOR</b>	62,9	62,8	63,5	64,2	64,5	65,4	65,9	65,6	65,9	66,3	66,4	66,3	66,0	65,7	66,6	67,5	68,5	69,0	69,6	68,7	69,3	68,4	68,4	68,8	69,9	69,9	69,6	68,8	68,7	68,6
<b>JPN</b>	85,2	85,0	84,8	84,8	84,7	85,2	85,4	84,8	85,0	84,6	85,1	86,1	86,0	86,2	86,3	86,4	86,4	86,1	86,1	86,2	86,3	85,8	85,5	86,1	86,4	86,3	86,5	86,1	86,1	85,8

ISO3	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
KAZ	59,2	58,9	59,5	60,5	60,3	59,0	60,8	61,0	59,3	57,0	56,4	57,7	58,2	57,3	59,1	59,3	59,1	60,5	61,3	62,0	63,6	64,0	64,4	63,1	64,2	66,5	64,4	63,4	63,2	63,2
KEN	49,6	50,3	51,1	51,1	51,4	52,7	52,6	54,0	55,6	56,4	56,9	57,4	56,8	56,7	56,4	56,0	55,8	56,2	56,9	57,6	57,9	58,8	58,2	59,1	59,4	60,1	60,5	60,7	61,2	61,3
KGZ	60,2	60,2	60,2	60,9	61,3	62,3	62,9	62,6	61,6	61,2	61,6	62,5	61,7	60,4	60,3	60,5	61,9	62,3	62,0	62,4	62,6	62,6	63,0	65,1	64,4	64,1	63,1	61,4	60,4	60,3
KHM	46,8	47,0	46,8	49,1	49,8	50,3	50,9	51,6	52,4	52,8	52,9	52,6	52,5	52,3	52,1	52,0	52,0	52,0	51,7	51,4	51,8	51,3	51,7	52,1	52,4	52,2	52,2	52,6	51,8	51,7
KOR	69,8	70,3	70,5	71,1	71,4	72,0	72,6	73,2	73,6	73,9	74,5	74,4	74,4	74,2	74,4	75,0	75,0	74,9	75,0	75,0	74,9	74,9	76,2	76,8	77,3	77,8	78,1	78,1	77,6	77,5
KWT	56,7	56,4	56,3	58,5	58,3	55,7	56,7	58,2	58,1	56,4	55,0	55,6	56,0	55,7	57,8	56,9	55,7	56,7	56,9	57,6	61,7	61,5	61,1	59,7	60,5	62,9	63,5	62,4	62,5	62,8
LAO	40,2	40,8	40,7	40,8	41,6	42,3	41,8	42,7	43,4	43,8	44,3	43,5	44,1	44,4	44,9	44,6	44,9	45,4	45,9	47,0	47,6	48,2	48,6	48,6	49,5	49,3	48,8	48,3	48,6	48,7
LBN	58,8	58,8	59,0	58,3	58,3	57,9	59,2	59,0	59,1	60,1	61,1	62,4	63,7	63,7	63,3	63,7	64,0	63,6	63,1	62,9	62,4	63,0	62,1	62,6	62,3	62,0	61,2	60,1	60,2	60,6
LBR	42,1	41,4	39,1	39,1	39,1	46,0	46,2	45,1	46,5	52,8	53,6	54,7	54,2	54,3	54,2	54,5	53,7	53,4	53,2	53,8	54,8	54,7	53,7	55,2	54,3	54,1	53,5	52,9	53,2	53,2
LBY	43,8	43,4	43,9	45,9	45,8	44,1	44,6	41,9	42,1	40,5	39,8	40,1	41,1	40,7	43,9	42,7	48,7	48,1	48,4	50,3	52,3	52,7	51,0	49,6	49,3	52,7	44,9	45,1	44,8	44,8
LCA	69,8	70,0	70,1	70,3	70,5	70,8	71,1	72,5	73,0	73,5	73,9	74,3	74,7	75,7	75,8	75,6	75,8	75,9	75,3	75,2	74,5	73,7	72,0	72,7	72,4	72,3	72,1	71,4	70,8	71,0
LKA	63,3	63,8	64,5	64,4	64,5	64,3	65,0	64,7	64,6	64,3	64,1	63,3	63,1	63,2	62,9	64,7	65,0	65,5	66,6	66,2	67,7	68,3	68,4	69,3	67,9	67,0	66,5	66,7	67,0	66,5
LSO	57,8	57,8	57,9	57,7	58,2	58,2	58,7	58,5	59,2	59,2	59,6	59,8	59,3	59,2	58,8	59,1	59,2	59,3	59,5	60,2	58,6	57,7	59,2	60,4	60,5	61,1	60,6	59,9	59,8	59,9
LTU	74,1	74,7	76,5	77,4	78,2	79,0	80,0	80,7	81,7	82,6	82,6	82,7	82,3	82,2	82,3	82,5	83,0	83,1	83,3	83,8	84,4	84,7	84,7	84,5	84,8	85,0	85,1	85,1	84,4	84,5
LUX	85,9	86,3	86,6	87,0	87,6	88,4	88,8	87,4	86,9	86,2	85,5	85,2	85,2	86,0	87,1	87,5	87,9	88,2	88,9	89,4	89,4	89,4	89,8	89,7	89,4	89,0	89,3	89,7	89,4	89,5
LVA	73,6	74,1	75,8	77,2	77,8	78,3	79,3	79,6	80,4	81,2	80,9	80,4	80,3	80,5	80,7	80,6	81,0	81,2	82,0	82,7	83,3	83,6	84,8	85,1	84,4	84,8	85,1	85,6	85,0	84,8
MAR	52,0	52,6	53,0	52,8	53,6	56,2	56,7	56,3	56,5	56,3	55,7	55,7	56,5	55,8	56,9	57,4	57,7	58,4	59,3	59,6	60,1	60,7	61,3	62,4	62,5	62,5	62,6	62,1	62,0	61,8
MDA	64,5	67,6	67,4	68,2	68,7	69,3	68,3	68,9	69,6	69,6	69,7	69,0	68,1	68,0	68,2	68,9	69,6	69,4	69,5	70,9	70,4	69,6	70,1	70,2	70,4	70,9	72,0	72,9	72,4	72,1
MDG	51,9	52,3	52,1	51,9	52,5	53,1	53,4	53,1	55,9	56,3	57,0	56,9	56,9	57,4	56,1	55,0	54,3	55,3	55,7	56,2	56,1	55,8	55,1	55,6	55,2	55,4	55,0	55,2	55,2	55,0
MDV	51,2	51,4	51,5	51,7	52,0	52,1	52,1	51,9	53,0	53,8	54,6	55,3	55,3	58,5	59,2	59,7	60,0	58,7	58,2	58,7	59,2	59,2	58,1	58,9	62,9	65,7	65,1	64,0	64,1	64,3
MEX	60,8	60,7	60,4	61,1	61,4	61,9	62,7	63,5	64,3	64,6	64,5	64,5	64,9	64,8	65,3	65,7	65,7	66,0	66,4	67,0	67,2	67,3	68,1	68,5	68,8	68,9	68,1	68,0	68,0	67,9
MKD	64,3	64,5	64,8	65,2	65,6	65,4	65,1	66,7	68,2	68,1	68,3	68,8	69,3	70,6	71,5	72,5	72,1	72,7	73,6	73,9	73,5	72,4	73,5	74,4	73,8	72,6	73,3	72,6	72,5	72,1
MLI	47,4	48,4	48,4	49,0	49,9	50,3	50,6	50,9	51,2	51,3	52,4	51,6	52,0	52,2	52,0	52,5	52,6	51,8	52,0	52,2	52,6	51,6	51,4	51,7	52,2	50,7	49,1	48,6	48,2	47,9
MLT	72,3	72,3	73,7	74,6	74,4	74,9	76,2	76,8	76,7	77,6	78,7	78,3	78,0	78,1	78,5	79,5	79,2	80,0	80,9	81,4	83,6	84,4	84,7	84,8	84,1	84,6	85,2	85,0	84,5	84,0
MMR	36,2	36,7	37,2	37,5	38,7	38,8	38,0	38,2	38,1	38,2	38,1	38,5	39,2	39,6	41,0	42,7	45,2	46,9	47,8	48,7	49,7	50,7	51,7	52,6	53,3	53,8	47,7	46,2	45,5	44,8
MNE	61,4	61,4	61,4	61,4	61,6	67,1	67,1	67,4	67,1	67,8	68,4	69,2	69,9	70,3	72,1	73,3	73,1	73,2	73,6	74,3	75,1	75,6	75,5	75,5	75,4	75,1	76,3	75,9	76,6	76,4
MNG	61,2	62,4	63,6	64,9	66,2	66,3	66,0	66,1	66,7	65,8	66,4	64,8	64,3	64,0	64,9	62,4	61,4	65,0	65,7	65,8	67,2	67,1	65,0	65,1	65,2	64,4	61,9	61,9	61,2	61,0
MOZ	47,2	48,7	48,8	49,1	51,0	52,1	53,0	52,5	52,2	52,6	52,4	51,9	52,4	52,6	52,9	53,9	54,1	54,4	54,1	53,6	53,4	51,6	49,7	48,8	50,7	51,3	50,9	50,8	50,9	50,6

ISO3	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
MRT	47,9	48,2	48,6	48,0	48,4	49,2	49,2	49,8	51,5	52,3	51,2	50,6	49,3	49,4	52,1	50,0	50,6	52,3	51,7	52,5	53,8	52,9	51,6	53,0	55,1	54,6	52,6	53,0	53,2	53,2
MUS	69,3	69,4	69,6	69,9	70,2	70,1	70,3	70,6	70,3	70,7	71,4	71,5	72,2	73,2	74,0	74,5	74,9	75,6	75,8	76,1	76,4	76,4	75,5	76,0	76,8	76,3	76,1	73,9	73,8	74,0
MWI	50,4	52,3	52,6	52,1	52,9	53,7	54,5	55,4	54,4	55,3	56,0	56,5	56,0	55,9	56,6	57,2	57,7	57,7	58,1	58,5	59,0	57,6	58,6	59,2	59,1	59,8	60,5	59,5	59,1	58,9
MYS	61,5	61,7	62,0	62,8	63,2	63,2	62,9	63,1	63,0	63,2	62,7	62,9	63,6	64,0	65,5	66,1	66,6	67,1	67,2	68,0	68,6	69,0	69,6	70,8	72,1	71,8	71,1	70,2	70,3	70,0
NAM	66,0	65,9	65,6	66,2	66,0	66,4	66,3	66,8	67,3	66,6	66,2	65,6	65,6	65,7	65,9	66,2	66,1	66,4	67,3	67,7	69,1	69,5	69,6	70,5	70,6	70,7	70,1	69,3	69,0	69,0
NER	45,1	44,9	44,9	45,4	45,7	47,1	48,0	48,2	48,8	49,4	49,9	49,9	49,9	50,2	50,1	52,0	51,9	50,3	50,1	50,4	50,2	50,6	50,8	51,0	51,6	52,5	52,8	52,9	52,4	52,2
NGA	46,5	46,5	47,9	49,8	51,8	49,5	50,0	51,2	50,6	51,2	51,0	51,7	53,3	53,5	55,7	54,7	53,4	53,7	53,9	54,2	54,9	56,0	55,3	55,3	55,9	56,5	56,2	55,7	55,6	55,5
NIC	56,2	58,4	58,5	58,9	59,3	60,0	60,7	61,4	61,6	61,6	62,0	62,2	61,8	61,5	61,5	61,0	60,9	61,1	61,0	61,4	61,5	61,2	60,2	55,2	54,4	54,2	52,9	52,3	52,3	52,1
NLD	85,1	85,3	85,4	85,3	85,6	85,9	87,4	87,7	87,8	87,8	87,8	88,3	88,6	88,9	89,1	88,8	89,3	89,2	89,5	89,9	90,2	90,2	90,4	90,7	91,0	91,0	91,0	91,2	90,8	90,7
NOR	84,1	84,0	84,4	86,1	85,8	85,2	85,0	85,6	85,8	85,9	85,7	86,4	86,9	86,2	87,2	87,8	87,9	88,2	88,8	89,3	90,4	90,6	91,1	90,2	89,9	89,8	89,2	89,8	89,8	89,9
NPL	51,1	50,8	51,5	51,6	51,8	51,3	51,1	50,7	51,3	52,1	52,8	54,9	57,5	58,0	58,2	57,9	57,3	57,6	56,9	57,0	57,1	57,5	59,1	58,7	59,0	58,7	58,1	58,3	58,7	58,8
NZL	87,7	88,0	88,5	88,9	89,6	89,7	90,1	90,5	90,8	91,1	91,4	91,6	91,6	92,2	92,8	93,1	93,3	93,4	93,3	93,0	93,0	92,5	92,7	92,3	92,7	92,5	92,6	92,1	91,9	91,7
OMN	54,2	52,7	53,4	55,1	53,8	51,5	53,3	53,5	53,7	53,8	52,9	53,1	54,4	55,3	57,0	57,6	57,1	57,4	57,7	58,7	61,2	62,2	60,9	61,7	62,7	64,0	61,9	59,6	59,9	60,6
PAK	48,8	49,0	48,5	48,4	48,3	48,8	49,0	49,2	49,6	49,9	50,1	50,7	50,4	50,4	51,3	51,4	51,5	51,8	52,3	52,8	53,3	53,5	52,7	52,3	52,0	52,3	51,5	50,1	49,9	49,9
PAN	68,7	68,9	69,2	69,4	69,6	70,2	70,2	70,2	70,5	70,6	70,8	70,9	71,3	71,3	71,2	71,2	70,9	71,1	70,9	71,5	72,2	73,3	73,8	74,3	74,4	74,1	73,8	73,9	73,6	73,6
PER	58,5	59,6	59,7	60,6	61,6	64,9	69,2	68,8	68,9	68,8	67,6	66,8	67,2	67,7	67,9	68,4	68,3	69,2	69,8	70,2	70,4	70,6	71,1	71,4	72,3	71,8	70,0	69,9	69,6	69,3
PHL	61,0	62,1	62,5	62,5	62,4	62,8	63,1	63,7	64,2	64,3	63,5	63,9	63,6	64,1	64,1	64,8	64,9	65,3	65,5	65,4	65,0	63,5	62,9	62,6	62,2	61,9	61,0	61,4	61,4	61,3
PNG	50,3	51,4	52,5	52,2	52,1	50,5	51,8	51,3	50,9	49,7	49,2	49,9	50,6	50,6	52,1	51,6	52,7	55,5	56,9	56,4	55,9	55,6	54,9	55,6	56,4	56,9	54,9	54,2	53,5	53,2
POL	75,3	76,9	77,1	77,9	78,3	79,0	79,8	80,7	80,3	79,6	80,7	80,0	79,7	80,0	80,3	80,4	80,5	81,1	82,0	82,4	83,4	82,3	81,0	80,9	80,8	80,5	80,4	80,0	80,2	79,9
PRT	74,3	75,2	75,3	75,8	75,9	76,4	76,7	76,7	77,1	77,8	77,6	78,2	78,8	79,5	80,0	80,3	80,8	80,5	80,5	80,5	80,8	80,3	80,2	80,7	80,8	80,6	80,8	81,4	81,3	81,1
PRY	60,3	60,9	61,3	61,3	61,4	62,2	62,6	64,3	64,1	64,5	64,1	64,3	64,8	65,5	65,4	65,6	65,9	65,8	65,7	65,8	66,5	66,8	66,7	67,0	67,3	66,8	66,9	66,5	66,2	66,0
QAT	59,0	57,6	58,4	59,5	58,4	57,3	58,1	59,1	59,8	59,9	59,2	60,0	61,3	62,1	63,8	63,4	62,7	63,4	64,1	64,7	66,3	65,4	66,0	65,9	66,8	67,1	65,1	63,7	63,6	63,7
ROU	68,3	69,2	70,3	71,4	71,1	71,5	71,4	71,4	71,6	70,3	70,7	71,8	72,4	74,1	75,8	77,0	77,2	77,2	79,4	79,8	80,7	80,8	79,0	78,4	78,2	78,2	78,3	77,9	77,4	77,4
RUS	61,0	61,3	61,5	63,2	62,4	60,1	60,3	60,8	61,1	61,5	60,8	60,9	61,4	60,6	61,6	61,9	61,8	61,7	62,1	62,0	62,9	62,8	63,5	63,1	63,7	64,4	62,5	59,8	59,2	59,0
RWA	43,6	44,0	44,5	44,9	46,1	47,4	48,6	49,6	49,2	50,8	51,3	52,3	52,5	52,8	53,4	54,3	55,0	55,6	55,6	55,9	56,5	55,0	55,2	56,3	57,0	56,6	55,6	53,6	52,9	52,8
SAU	55,3	54,7	55,6	57,2	55,8	54,0	54,3	54,9	53,4	51,7	51,2	51,2	51,3	50,9	54,9	54,7	53,6	53,6	54,4	55,5	58,7	58,8	59,4	58,4	60,8	62,3	61,7	60,0	60,5	61,1
SDN	36,6	36,8	37,2	36,8	37,4	37,2	37,8	37,6	37,8	38,2	38,4	38,8	38,9	38,5	40,2	40,6	39,8	41,2	41,8	42,7	43,6	44,2	45,1	44,0	45,7	44,6	43,1	42,4	41,8	42,0
SEN	56,3	56,3	56,7	57,0	57,4	57,2	57,6	57,6	57,5	57,5	57,3	57,5	58,4	58,9	58,9	58,7	58,9	58,7	59,3	59,0	59,7	59,9	59,7	60,1	60,2	60,9	60,5	60,8	59,7	59,3

ISO3	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
SGP	79,8	80,2	80,8	81,0	81,4	82,0	82,3	82,6	83,0	83,3	84,3	84,5	84,2	84,1	83,2	83,5	84,5	84,6	84,7	84,8	85,1	85,7	86,7	88,5	86,4	86,6	86,4	85,3	85,5	85,4
SLB	57,0	56,9	57,4	56,2	55,1	54,4	54,5	56,2	57,0	57,7	57,6	57,6	56,8	56,9	58,4	57,9	57,7	57,5	57,9	57,6	58,6	59,3	59,0	60,6	59,9	59,3	60,2	60,1	60,2	59,9
SLE	42,8	45,2	43,7	43,5	45,5	47,0	49,8	51,2	49,9	49,8	50,2	50,4	50,6	51,4	52,3	53,6	54,0	53,8	54,6	54,6	54,0	53,6	53,5	54,8	54,8	54,9	56,0	55,7	55,5	54,6
SLV	60,2	60,9	61,4	61,9	62,9	63,8	63,8	64,4	64,6	65,1	65,5	65,8	65,8	66,0	66,6	67,3	67,4	68,0	68,0	68,1	68,0	67,4	66,6	66,5	65,6	64,4	62,8	61,3	60,9	60,7
SOM																	19,7	20,7	35,2	35,1	35,0	36,0	35,6	37,5	36,4	36,8	37,9	36,0	37,7	37,7
SRB	59,8	60,4	60,6	60,5	60,3	62,5	65,5	65,8	65,5	66,3	67,6	68,2	68,6	69,0	70,2	70,5	70,7	71,3	71,2	71,8	72,3	72,8	71,4	71,2	71,9	72,1	72,1	71,5	71,3	71,1
STP	50,5	50,7	50,8	50,9	51,1	51,4	58,0	58,1	58,2	58,5	59,0	59,2	60,6	60,7	61,0	61,8	62,3	62,7	63,0	63,6	64,8	66,1	66,1	66,3	66,8	67,4	67,1	67,5	67,9	67,8
SUR	62,6	62,5	62,7	64,1	64,1	64,3	63,8	65,9	66,5	66,7	66,6	67,6	67,5	66,3	66,7	64,1	61,9	61,9	63,0	64,4	65,9	66,0	64,2	66,5	66,8	66,7	65,6	66,1	65,9	66,0
SVK	71,9	71,7	71,9	73,3	73,8	74,2	75,2	75,7	75,8	77,3	78,0	78,6	78,8	79,3	79,5	80,3	80,6	80,4	80,8	80,8	81,1	80,7	79,9	79,3	79,5	79,6	80,0	81,1	80,9	80,7
SVN	73,4	73,8	75,1	76,5	77,3	77,3	78,5	78,6	79,1	79,7	80,5	81,1	80,8	80,9	81,6	82,3	82,5	82,5	83,1	83,7	83,8	84,0	84,1	84,6	84,3	84,1	83,7	85,1	84,3	83,9
SWE	84,4	85,0	86,0	86,8	87,2	87,7	88,1	88,8	89,0	88,0	88,0	88,3	88,2	88,3	89,0	89,3	89,3	89,6	91,3	91,5	92,8	92,2	92,6	93,1	93,6	93,6	93,6	93,8	93,7	93,7
SWZ	53,4	52,6	52,6	52,8	52,8	52,6	52,6	51,9	52,6	52,5	52,7	54,2	53,8	53,8	54,0	54,3	55,3	55,1	55,4	57,1	57,5	57,3	57,8	57,4	56,9	56,9	55,0	53,5	54,1	54,2
SYC	68,2	68,2	68,3	68,3	68,3	68,2	67,7	67,9	68,1	68,2	68,7	68,1	69,6	70,2	71,0	72,2	73,6	74,6	75,1	76,0	76,5	77,2	76,7	77,5	77,5	78,1	79,9	79,8	79,4	79,6
SYR	43,4	43,6	43,9	44,3	43,6	44,0	44,8	45,8	47,1	47,7	49,2	50,3	49,6	48,5	49,8	49,2	46,4	46,2	44,0	44,4	44,4	43,6	44,0	43,9	43,8	43,5	43,4	43,5	44,2	44,2
TCD	40,0	40,3	40,4	40,7	41,1	40,8	41,4	42,1	41,3	38,1	37,7	37,8	38,1	37,7	40,3	39,9	39,6	41,0	42,2	42,7	43,2	42,5	41,5	40,6	41,1	42,3	40,4	39,4	40,1	40,0
TGO	47,9	48,6	48,9	49,0	49,5	49,3	49,5	49,7	49,6	50,3	51,5	52,2	52,8	52,5	52,0	52,4	52,2	52,1	53,3	54,3	55,6	56,9	56,9	56,7	57,0	58,8	58,8	58,8	58,5	57,8
THA	61,9	62,1	61,8	62,5	62,9	63,5	64,5	64,9	64,8	64,4	63,6	63,1	63,2	63,6	64,1	64,0	65,2	65,4	64,6	62,9	62,8	62,7	63,3	63,8	65,7	65,3	64,5	63,9	64,4	64,1
TJK	52,1	51,8	52,3	53,7	54,0	57,0	58,1	58,3	58,1	57,5	57,1	57,0	56,6	56,6	56,7	55,9	56,2	56,3	56,6	55,8	55,3	53,5	54,1	54,7	54,6	53,7	53,8	52,6	52,5	52,6
TKM	40,2	38,4	41,2	46,6	44,8	38,0	35,5	38,9	40,5	40,9	40,4	38,7	39,9	39,3	45,6	45,9	44,8	45,7	46,3	47,5	48,4	50,3	50,4	49,5	51,6	51,0	51,4	51,4	51,5	51,5
TLS	36,8	36,8	36,9	37,4	38,2	56,5	57,1	57,7	57,6	58,0	58,5	59,1	59,9	60,9	61,8	61,3	61,6	61,3	61,1	60,0	47,4	54,3	55,0	52,3	55,0	57,2	56,6	57,3	57,4	57,9
TTO	65,9	65,9	66,8	68,0	67,7	67,6	67,6	67,2	67,2	68,0	67,3	67,0	67,7	67,8	67,8	68,4	68,0	68,7	69,1	70,4	72,8	72,9	73,4	72,3	72,1	73,1	73,0	73,2	73,3	73,4
TUN	55,0	55,5	55,7	56,3	56,3	56,4	56,6	56,7	56,6	56,9	56,7	57,2	57,8	57,3	57,7	58,0	65,1	65,4	65,1	65,4	66,1	67,1	67,6	68,5	68,2	68,7	68,5	67,1	66,4	65,8
TUR	57,0	57,1	58,2	58,6	58,9	60,7	60,9	62,0	62,6	63,1	62,9	64,1	63,9	63,9	64,3	65,0	65,3	65,1	65,0	66,0	65,4	62,9	63,2	64,0	64,1	64,2	63,8	62,6	63,0	62,9
TWN	67,6	67,9	67,0	67,3	67,8	70,4	71,6	71,2	71,3	70,6	71,3	71,5	71,6	72,4	72,7	73,6	74,0	74,7	75,0	75,5	76,4	76,1	76,9	76,9	77,7	77,5	78,7	79,1	79,3	79,1
TZA	53,1	53,8	54,6	55,4	56,1	55,9	55,8	56,2	55,6	56,5	55,5	56,1	56,0	56,6	57,2	57,7	57,2	57,2	57,2	57,1	56,5	56,3	57,3	58,0	58,8	59,0	58,9	59,5	60,5	60,3
UGA	48,1	49,2	49,9	49,9	50,9	50,0	50,4	50,5	49,7	52,1	52,5	53,0	52,7	52,7	54,0	53,9	53,3	52,8	53,0	53,2	53,3	52,6	52,8	53,5	53,7	53,3	53,0	52,4	52,0	51,8
UKR	62,1	62,1	62,8	62,5	62,9	63,6	64,8	67,6	66,5	67,0	68,1	68,4	67,8	67,7	68,6	66,8	67,0	67,7	67,1	66,0	64,9	65,4	65,9	67,0	68,6	69,8	68,7	65,9	66,2	66,2
URY	74,0	74,7	75,7	76,1	76,3	77,0	78,0	78,1	78,9	78,2	77,9	77,3	77,5	76,9	76,5	76,8	77,2	77,7	78,3	78,7	79,1	78,9	79,9	79,2	79,1	79,1	79,6	79,9	80,0	80,0

ISO3	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
USA	84,4	84,4	84,3	84,3	84,2	84,3	85,0	84,9	84,5	84,7	85,2	85,5	86,3	86,5	87,0	86,7	86,8	87,0	87,3	87,3	87,8	87,5	87,4	86,6	86,5	85,9	85,6	85,7	85,2	85,1
UZB	47,3	47,3	47,4	47,9	47,9	46,8	44,6	45,6	45,6	46,4	47,3	46,6	48,3	47,3	49,6	50,5	49,7	49,7	50,3	51,2	52,0	52,6	54,8	54,4	57,4	58,3	57,1	57,3	57,4	57,3
VCT	69,5	69,5	69,5	69,6	69,6	69,8	70,3	71,0	71,5	71,6	71,9	72,4	72,8	73,3	73,1	74,3	75,2	75,3	76,2	76,2	76,9	77,2	76,4	77,4	76,7	77,1	76,9	76,9	76,5	75,8
VEN	61,0	58,9	59,8	61,2	60,3	58,8	59,4	58,8	58,1	56,9	56,2	57,1	59,7	59,3	60,5	60,0	58,4	58,8	57,5	57,9	57,1	57,5	55,1	53,9	52,7	51,9	51,8	52,0	52,2	52,5
VNM	47,3	47,5	47,8	48,8	49,4	49,4	50,2	51,0	51,4	51,2	52,1	53,0	53,3	53,3	54,5	54,5	54,8	55,3	56,1	56,3	56,6	57,3	57,2	56,7	57,3	58,0	58,2	58,9	58,9	59,0
VUT	64,1	64,1	64,1	64,2	64,1	64,2	64,2	64,5	64,7	65,5	66,1	67,0	66,0	65,7	65,2	64,5	63,9	64,0	63,9	64,5	65,0	66,0	67,3	68,4	66,1	66,2	66,7	67,6	67,6	67,6
YEM	36,2	37,2	38,4	39,7	38,3	36,4	37,7	39,0	39,4	39,3	38,8	39,0	40,8	41,0	44,0	43,6	43,7	47,5	48,0	46,1	44,8	43,9	43,6	42,8	43,2	43,1	43,4	43,8	44,5	44,5
ZAF	66,0	66,2	66,3	66,3	66,2	65,8	65,8	66,8	67,6	67,2	66,7	66,7	66,4	65,6	67,3	67,3	67,6	68,4	68,8	70,1	71,1	70,5	70,5	71,0	70,5	69,8	70,0	69,2	69,1	69,0
ZMB	57,8	58,7	59,4	59,3	60,0	59,8	60,1	59,5	58,1	57,7	57,9	57,8	57,7	58,6	58,7	58,7	59,1	59,4	58,8	59,5	59,1	57,6	56,6	57,5	58,5	55,9	52,9	54,0	55,2	55,3
ZWE	52,1	52,1	52,7	51,9	52,1	52,1	50,5	50,0	49,4	48,6	48,5	47,7	46,8	45,8	47,5	48,4	48,9	50,5	51,0	51,7	51,9	51,6	52,5	53,1	53,1	53,9	52,5	51,5	52,4	52,3

Notes: This table has been prepared by the author and estimates the Ethics Perception Index (ETPI) for countries around the world from 1995 to 2024, based on data known as of 16 July 2024. Country names are represented using ISO3 codes to ensure the table fits on one page.

Included countries are Afghanistan (AFG), Angola (AGO), Albania (ALB), United Arab Emirates (ARE), Argentina (ARG), Armenia (ARM), Australia (AUS), Austria (AUT), Azerbaijan (AZE), Burundi (BDI), Belgium (BEL), Benin (BEN), Burkina Faso (BFA), Bangladesh (BGD), Bulgaria (BGR), Bahrain (BHR), Bahamas (BHS), Bosnia and Herzegovina (BIH), Belarus (BLR), Bolivia (BOL), Brazil (BRA), Barbados (BRB), Brunei (BRN), Bhutan (BTN), Botswana (BWA), Central African Republic (CAF), Canada (CAN), Switzerland (CHE), Chile (CHL), China (CHN), Côte d'Ivoire (CIV), Cameroon (CMR), Congo, Dem. Rep. (COD), Congo, Rep. (COG), Colombia (COL), Comoros (COM), Cabo Verde (CPV), Costa Rica (CRI), Cuba (CUB), Cyprus (CYP), Czech Republic (CZE), Germany (DEU), Djibouti (DJI), Dominica (DMA), Denmark (DNK), Dominican Republic (DOM), Algeria (DZA), Ecuador (ECU), Egypt (EGY), Eritrea (ERI), Spain (ESP), Estonia (EST), Ethiopia (ETH), Finland (FIN), Fiji (FJI), France (FRA), Gabon (GAB), United Kingdom (GBR), Georgia (GEO), Ghana (GHA), Guinea (GIN), Gambia (GMB), Guinea-Bissau (GNB), Equatorial Guinea (GNQ), Greece (GRC), Guatemala (GTM), Guyana (GUY), Hong Kong (HKG), Honduras (HND), Croatia (HRV), Haiti (HTI), Hungary (HUN), Indonesia (IDN), India (IND), Ireland (IRL), Iran (IRN), Iraq (IRQ), Iceland (ISL), Israel (ISR), Italy (ITA), Jamaica (JAM), Jordan (JOR), Japan (JPN), Kazakhstan (KAZ), Kenya (KEN), Kyrgyzstan (KGZ), Cambodia (KHM), Korea, Rep. (KOR), Kuwait (KWT), Lao PDR (LAO), Lebanon (LBN), Liberia (LBR), Libya (LBY), St. Lucia (LCA), Sri Lanka (LKA), Lesotho (LSO), Lithuania (LTU), Luxembourg (LUX), Latvia (LVA), Morocco (MAR), Moldova (MDA), Madagascar (MDG), Maldives (MDV), Mexico (MEX), North Macedonia (MKD), Mali (MLI), Malta (MLT), Myanmar (MMR), Montenegro (MNE), Mongolia (MNG), Mozambique (MOZ), Mauritania (MRT), Mauritius (MUS), Malawi (MWI), Malaysia (MYS), Namibia (NAM), Niger (NER), Nigeria (NGA), Nicaragua (NIC), Netherlands (NLD), Norway (NOR), Nepal (NPL), New Zealand (NZL), Oman (OMN), Pakistan (PAK), Panama (PAN), Peru (PER), Philippines (PHL), Papua New Guinea (PNG), Poland (POL), Portugal (PRT), Paraguay (PRY), Qatar (QAT), Romania (ROU), Russia (RUS), Rwanda (RWA), Saudi Arabia (SAU), Sudan (SDN), Senegal (SEN), Singapore (SGP), Solomon Islands (SLB), Sierra Leone (SLE), El Salvador (SLV), Somalia (SOM), Serbia (SRB), São Tomé and Príncipe (STP), Suriname (SUR), Slovakia (SVK), Slovenia (SVN), Sweden (SWE), Eswatini (SWZ), Seychelles (SYC), Syria (SYR), Chad (TCD), Togo (TGO), Thailand (THA), Tajikistan (TJK), Turkmenistan (TKM), Timor-Leste (TLS), Trinidad and Tobago (TTO), Tunisia (TUN), Turkey (TUR), Taiwan (TWN), Tanzania (TZA), Uganda (UGA), Ukraine (UKR), Uruguay (URY), United States (USA), Uzbekistan (UZB), St. Vincent and the Grenadines (VCT), Venezuela (VEN), Vietnam (VNM), Vanuatu (VUT), Yemen (YEM), South Africa (ZAF), Zambia (ZMB), and Zimbabwe (ZWE).

## Annex B: Significant Changes in Ethics Perception Index (ETPI) from 1995 to 2024

Table B1: Significant annual changes in the Ethics Perception Index (ETPI) by country (1995-2024)

<i>iso</i>	<i>Year_before</i>	<i>ETPI_before</i>	<i>Year_of_leap</i>	<i>ETPI_of_leap</i>	<i>country</i>
<i>AFG</i>	2001	28,5	2002	42,8	Afghanistan
<i>AFG</i>	2020	42,8	2021	46,4	Afghanistan
<i>AGO</i>	2000	46,4	2001	32,3	Angola
<i>AGO</i>	2001	32,3	2002	36,6	Angola
<i>COD</i>	1999	36,6	2000	43,8	Congo, Dem. Rep.
<i>COG</i>	1996	43,8	1997	40,8	Congo, Rep.
<i>GMB</i>	2016	40,8	2017	57,0	Gambia
<i>GNQ</i>	2004	57,0	2005	39,5	Equatorial Guinea
<i>LBR</i>	1999	39,5	2000	46,0	Liberia
<i>LBR</i>	2003	46,0	2004	52,8	Liberia
<i>LBY</i>	2010	52,8	2011	48,7	Libya
<i>LBY</i>	2020	48,7	2021	44,9	Libya
<i>MMR</i>	2020	44,9	2021	47,7	Myanmar
<i>SOM</i>	2012	47,7	2013	35,2	Somalia
<i>STP</i>	2000	35,2	2001	58,0	São Tomé and Príncipe
<i>TKM</i>	1997	58,0	1998	46,6	Turkmenistan
<i>TKM</i>	1999	46,6	2000	38,0	Turkmenistan
<i>TKM</i>	2008	38,0	2009	45,6	Turkmenistan
<i>TLS</i>	1999	45,6	2000	56,5	Timor-Leste
<i>TLS</i>	2014	56,5	2015	47,4	Timor-Leste
<i>TLS</i>	2015	47,4	2016	54,3	Timor-Leste
<i>TUN</i>	2010	54,3	2011	65,1	Tunisia

Notes: This table, prepared by the author, shows significant year-on-year changes in the Ethics Perception Index (ETPI) for various countries from 1995 to 2024, based on data available on 16 July 2024. A significant change is defined as a change of 10% or more in the ETPI from one year to the next.

Explanation of columns:

ISO: ISO3 country code.

Year\_before: The year preceding the significant change.

ETPI\_before: The ETPI value in the year preceding the significant change.

Year\_of\_leap: The year in which the significant change took place.

ETPI\_of\_leap: The ETPI value in the year of the significant change.

Country: The full name of the country.

This Table B1 helps to identify possible historical or socio-political events that may have influenced ethical perceptions in these countries. The ETPI is based on several indices, including the Economic Freedom Index, the Corruption Perception Index, the Human Development Index, the Education Index, the Environmental Performance Index and the Human Rights Index. An increase in these indices typically leads to an increase in the ETPI. Conversely, an increase in natural resource depletion as a percentage of GDP tends to reduce the ETPI.

Possible contextual background for significant changes:

- ✓ Afghanistan (2001-2002): Post-9/11 geopolitical changes and subsequent military conflict (Council on Foreign Relations, 2022) are likely to have influenced ethical conditions.
- ✓ Angola (2000-2001): End of civil war and subsequent reconstruction efforts (Tufts University, 2015).
- ✓ Congo, Dem. Rep. (1999-2000): The Lusaka ceasefire agreement (The Lusaka Ceasefire Agreement, 1999) and efforts to stabilise the region.
- ✓ Gambia (2016-2017): The transition of power from long-time ruler Yahya Jammeh to Adama Barrow (Al Jazeera, 2017).
- ✓ Liberia (1999-2000): The period leading up to the end of Liberia's second civil war (Kieh, 2009).
- ✓ Libya (2010-2011): The Libyan civil war and the fall of Muammar Gaddafi (Bouckaert, 2012).
- ✓ Myanmar (2020-2021): Political upheaval and military coup (Clare, 2021).
- ✓ Somalia (2012-2013): Efforts to establish stable government and reduce piracy (The World Bank, 2013).
- ✓ São Tomé and Príncipe (2000-2001): Political reforms and stabilisation efforts (Nascimento & Presidency of the Federative Republic of Brazil, 2010).
- ✓ Turkmenistan (1997-1998, 1999-2000, 2008-2009): Leadership transition and economic reforms (Bohr, 2005; Jasutis et al., 2020).
- ✓ Timor-Leste (1999-2000, 2014-2015, 2015-2016): Independence from Indonesia [1999-2002] and subsequent nation-building efforts, as evidenced by GDP per capita peaking in 2014-2016 and declining thereafter (diminishing returns from depleting natural resources) (Sakane, 2024).
- ✓ Tunisia (2010-2011): The Tunisian revolution and the start of the Arab Spring (Kuznetsov, 2022).

This information provides a comprehensive understanding of the significant changes in the ETPI and the potential socio-political and economic factors that may have influenced these changes.

### **Annex C: Technical Protocol for Standardised Implementation and Replication (Quick-Start Guide)**

This protocol enables independent researchers to replicate the Ethics Perception Index (ETPI) and the Regional Ethics Perception Index (RETPI) using standard statistical software or spreadsheet applications.

#### **Phase 1: Data Acquisition (The Seven "LEGO Bricks")**

Collect the latest available data (LD) for the following seven components, which are internationally standardised:

1. CPI: Corruption Perceptions Index (Transparency International)
2. EFI: Index of Economic Freedom (Heritage Foundation/Fraser Institute)
3. HDI: Human Development Index (UNDP)
4. EI: Education Index (UNDP)
5. HRI: Human Rights Index (Our World in Data)
6. EPI: Environmental Performance Index (Yale University)
7. NRD: Natural Resource Depletion (% of GDP) (World Bank).

#### **Phase 2: Preprocessing and Scaling (Harmonisation)**

To ensure comparability, rescale all raw values (X) to the 0–100 range by applying the following rules:

For positive indicators (CPI, EFI, HDI, EI, HRI and EPI):

$$C_{it} = \left( \frac{X_{it}}{\max(X)} \right) \times 100 \quad (1)$$

For the Negative Indicator (NRD):

$$NRD_{it}^R = 100 - \left( \frac{NRD_{it} - \min(NRD)}{\max(NRD) - \min(NRD)} \right) \times 100 \quad (2)$$

Please note that outliers are not trimmed, but rather absorbed by the scaling process in order to preserve ethical extremes.

### Phase 3: Aggregation (the ETPI Calculation)

Calculate the national baseline (ETPI) by taking the arithmetic mean of the seven rescaled components:

$$ETPI_{it} = \frac{1}{7} \sum_{j=1}^7 R_{jit}$$

Note: equal weighting (1/7) has been applied to ensure transparency and prevent subjective prioritisation.

### Phase 4: Regional Modulation (The RETPI Calculation)

- Obtain Ethical Engagement (E): Extract the Google Trends search volume (or equivalent data from a different source, such as social network data — all alternatives must be well-grounded and documented) for ethics-related topics in the target region. Normalise to a 0-1 scale.
- Set bounds: Set L and H to 0.2 (the 20% threshold for balancing sensitivity and robustness). Any deviation from 20% for L and H must be well-grounded and documented.
- Use the piecewise function (T = ETPI) to calculate the unscaled  $RETPI^U$ :

$$RETPI^U = \begin{cases} T & \text{if } E = 50\% \\ (1 - L)T & \text{if } E = 0\% \\ (1 - L)T + \left(\frac{E}{50\%}\right)(TL) & \text{if } E \in (0\%; 50\%) \\ (1 + H)T & \text{if } E = 100\% \\ T + \left(\frac{E - 50\%}{50\%}\right)(TH) & \text{if } E \in (50\%; 100\%) \end{cases}$$

Final scaling: Rescale the RETPIU values to the range of 0–100 to enable global comparability.

### Phase 5: Resilience Assessment (The "Stress Test")

To measure how well a region maintained its ethical standards during a crisis (e.g. the 2020 pandemic), calculate the Resilience Ratio (RR):

$$RR_U = \frac{X_{U,t_0+s}}{X_{U,t_0-1}}, X \in \{ETPI, RETPI\} \quad (8)$$

Notes: Own formula.

Verdict:  $RR \approx 1$  (held level);  $RR < 1$  (declined);  $RR > 1$  (improved/resilient).

**Replicator's checklist:**

- ✓ All seven components are scaled from 0 to 100.
- ✓ Missing data between periods is filled via linear interpolation.
- ✓ Missing recent data is used for Last-Value Carry-Forward (LVCF) until the next ME-Matrix update.
- ✓ Symmetrical bounds ( $L=H=0.2$ ) are used unless otherwise justified.