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Editorial

Менаџмент у хотелијерству и туризму – Hotel and Tourism Management is an open access peer-reviewed journal which discusses major trends and developments in a variety of topics related to the hospitality and tourism industry. The Journal publishes both theoretical and applied research papers, giving full support to collaborative research efforts taken jointly by academia and industry. According to its editorial policy goal, *Менаџмент у хотелијерству и туризму – Hotel and Tourism Management* has constantly been striving to increase its quality by promoting the popularisation of science and providing significant scientific and professional contribution to the development of hospitality and tourism industry, both in Serbia and on the global scale. The Journal is published by the Faculty of Hotel Management and Tourism in Vrnjačka Banja, University of Kragujevac. Since launching the Journal in 2013, twenty-six issues have been published so far.

Менаџмент у хотелијерству и туризму – Hotel and Tourism Management includes the following sections: Original Scientific Paper, Review Article, Short or Preliminary Announcement and Scientific Critique. The Journal does not consider PhD theses as prior publication and welcomes excerpts from the author's dissertations. It is published semiannually. The Journal offers an open access of its contents, which makes research results more visible to a wider international academic community. All articles are published in English and undergo a double-blind peer-review process.

The main aspects taken into consideration in paper evaluation are the originality of the study, contribution to the theory and practice and the use of grammar and style (either American or British English are accepted). The expected turn-around period is one to two months following the date of receipt. The crucial requirements for the submission of a manuscript are that the manuscript has not been published before, nor is it under consideration for publication elsewhere. The manuscript will be initially checked to ensure that it meets the scope of the Journal and its formal requirements. Submitted content will be checked for plagiarism. The provided names and email addresses will be used exclusively for the purposes stated by the Journal and will not be made available for any other purpose or to any other party.

The Journal has a reputable international editorial board comprising experts from the United States, the United Kingdom, Australia, India, Sweden, Spain, Italy, Israel, the United Arab Emirates, Argentina, Slovenia, Bulgaria, Serbia, Croatia, Montenegro.

We are glad to announce that *Менаџмент у хотелијерству и туризму – Hotel and Tourism Management* is indexed in Web of Science (Emerging Sources Citation Index – ESCI), ERIHPLUS (European Reference Index for the Humanities and the Social Sciences), CABELLS Scholarly Analytics, CEEOL (Central and Eastern European Online Library), DOAJ (Directory of Open Access Journals), ProQuest, EBSCO (EBSCO Information Services), Ulrich's Web (Ulrich's Periodicals Directory), CAB Abstract, SCIndeks (Serbian Citation Index), Scilit, CNKI (China National Knowledge Infrastructure), CyberLeninka, WorldCat and Google Scholar databases.

We would like to use this opportunity to express our deep gratitude to the authors, reviewers, and members of the Editorial Board for their devoted time and efforts that have contributed to the development of our Journal. At the end, we are pleased to invite you to look into the latest research in the fields of hospitality and tourism presented in the current issue.

Editors

prof. Miljan Leković

prof. Darko Dimitrovski

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Original Scientific Paper

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External whistleblowing in the scope of relativism, risk taking propensity and fear of retaliation: An investigation in Turkey's tourism industry

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Abstract

Purpose – This study examines how employees in the tourism sector perceive and engage in external whistleblowing, with a particular focus on the roles of ethical relativism, risk-taking propensity, and fear of retaliation. **Methodology** – Employing a quantitative research design, the study analyzes data collected from 405 tourism employees in Turkey through descriptive statistics, factor analysis, and regression-based moderation analysis. **Findings** – The findings indicate that the most frequently observed unethical practices include discrimination, workplace bullying (mobbing), and mismanagement of resources. Notably, the results also highlight a general reluctance among employees to report such behaviors to external authorities. Furthermore, fear of retaliation was found to moderate the relationship between individuals' risk-taking propensity and their likelihood of engaging in external whistleblowing. **Implications** – In response to increasing instances of corporate misconduct and the resulting decline in public trust, the development of regulations focused on corporate and organizational ethics has become essential. Within this context, whistleblowing is recognized as a crucial mechanism for detecting and preventing unethical practices within organizations.

Keywords: external whistleblowing, ethical relativism, risk-taking propensity, fear of retaliation, tourism industry
JEL classification: L83, Z32, D81

Eksterno uzbunjivanje u kontekstu relativizma, sklonosti ka preuzimanju rizika i straha od odmazde: Istraživanje u turističkoj industriji Turske

Sažetak

Svrha – Ova studija ispituje kako zaposleni u sektoru turizma percipiraju i praktikuju eksterno uzbunjivanje (*whistleblowing*), sa posebnim fokusom na ulogu etičkog relativizma, sklonosti ka preuzimanju rizika i straha od odmazde. **Metodologija** – Primenom kvantitativnog istraživačkog dizajna analizirani su podaci prikupljeni od 405 zaposlenih u turizmu u Turskoj, korišćenjem deskriptivne statistike, faktorske analize i regresione analize

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sa moderatorom. **Rezultati** – Rezultati ukazuju da najčešće uočene neetičke prakse uključuju diskriminaciju, zlostavljanje na radnom mestu (mobing) i loše upravljanje resursima. Takođe, rezultati ukazuju na opštu nespremnost zaposlenih da takva ponašanja prijave eksternim institucijama. Dalje, utvrđeno je da strah od odmazde moderira odnos između sklonosti pojedinaca ka preuzimanju rizika i njihove verovatnoće da se uključe u eksterno uzbunjivanje. **Implikacije** – U svetlu sve učestalijih slučajeva korporativnih zloupotreba i posledičnog pada poverenja javnosti, razvoj regulative usmerene na korporativnu i organizacionu etiku postaje od suštinskog značaja. U tom kontekstu, uzbunjivanje se prepoznaje kao ključni mehanizam za otkrivanje i sprečavanje neetičkih praksi unutar organizacija.

Ključne reči: eksterno uzbunjivanje, etički relativizam, sklonost ka preuzimanju rizika, strah od odmazde, turistička industrija
JEL klasifikacija: L83, Z32, D81

1. Introduction

Recent initiatives to curb unethical corporate conduct have yielded limited success, as such incidents continue to rise in both frequency and economic impact (Yang & Xu, 2020). The tourism sector is particularly vulnerable to unethical practices due to its high exposure to external shocks, relational business structure, and complex networks involving employees, customers, suppliers, and intermediaries (Güven & Şahin, 2023). These structural features create environments where managerial oversight gaps become more pronounced and sector-specific forms of misconduct – such as withholding payments from guides or intentionally overbooking services – are more likely to occur. Consequently, there is a growing need for ethical inquiry that goes beyond generic workplace ethics and accounts for the sector-specific risk conditions that shape decision-making in tourism.

Unethical behavior is influenced by both individual and organizational factors (Chang, 2025), encompassing practices such as bribery, nepotism, fraud, misappropriation, abuse of authority, and gender-based discrimination (Lasthuizen et al., 2011). Yet tourism workplaces differ from other service sectors in that employees frequently operate in culturally diverse teams, under seasonal or precarious contracts, and within hierarchical structures characterized by pronounced power asymmetries. These characteristics may blur ethical boundaries and create situations in which employees’ responses to wrongdoing are shaped not solely by moral principles, but also by perceived personal risks and contextual pressures.

Ethical position theory highlights the central role of personal moral philosophies in shaping judgments and reactions to ethically charged situations (Forsyth et al., 2008). Relativism – defined as the rejection of universal moral rules – may be particularly salient in tourism, where cultural heterogeneity and situational flexibility frequently normalize context-dependent ethical reasoning. Similarly, idealism reflects an individual’s belief in positive moral outcomes, but its influence may be constrained in fast-paced environments where immediate operational demands override moral reflection. These dynamics suggest that the moral orientations of tourism employees may be more fluid and situational than in more standardized or formalized sectors (Turan & Çekic, 2023).

Whistleblowing represents a critical mechanism for exposing unethical practices, yet individuals vary considerably in their willingness to report wrongdoing (Fischer et al., 2024). External whistleblowing – reporting misconduct to parties outside the organization—poses heightened personal and professional risks (Güven, 2023). Tourism employees may be particularly sensitive to these risks due to limited job security, strong dependency on employer evaluations, and exposure to culturally informed norms that stigmatize reporting. Retaliation can include demotion, termination, social exclusion, harassment, or threats

(Sulkun, 2020), and the fear of such consequences remains one of the strongest deterrents to whistleblowing across contexts (Iwai et al., 2021).

Moreover, reporting unethical conduct inherently involves navigating uncertainty and risk (Mansbach, 2011). In tourism, the decision becomes even more complex due to fluctuating work conditions, dependence on customer satisfaction, and the multicultural nature of interactions, which can render ethical judgments more ambiguous (Fennell, 2019). For these reasons, ethical relativism, risk-taking propensity, and fear of retaliation emerge as particularly salient antecedents of whistleblowing in tourism, reflecting the combined influence of moral reasoning, behavioral risk orientation, and context-specific vulnerabilities.

Employees consider multiple factors before deciding whether to report wrongdoing, with fear of retaliation from supervisors or colleagues being particularly salient (Dhamija & Rai, 2018). Whistleblowing is widely perceived as a high-risk, low-reward behavior, exposing individuals to revenge, stigma, blame, and organizational disapproval (Guven & Sahin, 2023). Although prior research recognizes retaliation as a critical barrier, its interaction with ethical orientations and risk perceptions remains underexplored, especially when disclosures may have substantial organizational consequences (Danis et al., 2008).

In Turkey, a situationalist cultural context where social, regional, and cultural variations shape moral judgments, ethical relativism encourages employees to interpret ethical issues through contextually grounded frameworks rather than universal norms (Forsyth et al., 2008). When combined with individual differences in risk-taking propensity, such relativistic orientations may strongly influence whistleblowing decisions, particularly under conditions of heightened fear of retaliation.

Despite the contextual and theoretical relevance of these factors, previous studies have rarely examined their interaction within a sector-specific ethical risk framework. Existing studies have tended to focus on general workplace ethics or isolated antecedents of whistleblowing (Fakfare et al., 2024), rather than the combined influence of moral orientations and risk perceptions in tourism settings. Addressing this gap, the present study investigates how ethical relativism, risk-taking propensity, and fear of retaliation jointly shape external whistleblowing intentions among tourism employees in Turkey. By integrating these variables within a culturally situated and sector-specific framework, the study aims to provide a more comprehensive understanding of whistleblowing behavior in a non-Western, high-risk service context. Accordingly, the research is guided by the following questions:

RQ1: What are tourism employees' attitudes toward external whistleblowing?

RQ2: How do relativism and risk-taking propensity relate to external whistleblowing?

RQ3: What role does fear of retaliation play in influencing external whistleblowing, including its moderating effects on the relationships between relativism, risk-taking propensity, and whistleblowing?

2. Theoretical frameworks and hypothesis development

2.1. External whistleblowing

Whistleblowing is commonly categorized into two forms: internal and external (Scheetz et al., 2022). Internal whistleblowing refers to reporting unethical or illegal conduct through organizational channels, whereas external whistleblowing involves disclosure to external authorities. Research shows that employees are generally more inclined to report wrongdoing internally (Wozir & Yurtkoru, 2017). External whistleblowing, by contrast, is often perceived less favorably and associated with betrayal or disloyalty (Park et al., 2008).

Cultural context further shapes these perceptions. In collectivist societies, external reporting may be viewed as a violation of group harmony or loyalty (Güven & Şahin, 2024). Consequently, both the preferred reporting channel and the perceived legitimacy of whistleblowing are influenced by broader cultural norms. Based on these insights, the following hypothesis is proposed.

H_1: Attitudes towards external whistleblowing are negative among tourism employees.

2.2. Relativism

According to Ethical Position Theory, individuals high in idealism prioritize the welfare of others, whereas those high in relativism reject universal moral rules and rely on context-specific judgments (Forsyth et al., 1988). Although some studies suggest that relativism does not strongly influence preferences for different forms of whistleblowing (Dhamija & Rai, 2018), others indicate that relativists may be more inclined to disclose sensitive information, while some report no significant link (Brink et al., 2015). Relativists generally emphasize that ethical judgments depend on situational and interpersonal factors rather than absolute classifications (Henle et al., 2005). Building on this perspective, Martadinata et al. (2023) suggest that relativists may be more willing to engage in high-risk external whistleblowing despite potential consequences.

Turkey is considered a country with a situationalist cultural orientation, where moral rules are not assumed to apply universally to all situations (Forsyth et al., 2008). Within EPT, individuals' ethical reasoning can be conceptualized along the idealism–relativism continuum. Given this situationalist context, relativistic orientations are expected to be particularly salient among tourism employees, as they facilitate interpretation of ethical issues through culturally and contextually grounded understandings. In line with both EPT and Turkey's cultural characteristics, relativism is selected as the primary ethical dimension for this study. Based on these insights, the following hypothesis is proposed.

H_2: Relativism is positively related to external whistleblowing.

2.3. Risk taking propensity

Applying ethical principles in practice often involves uncertainty about the potential consequences of one's actions. As Hansson (2010) observes, individuals may not fully understand the risks they assume – or impose on others – when attempting to address moral wrongdoing. An individual's propensity for risk-taking plays a key role in shaping their willingness to engage in high-stakes actions such as whistleblowing (Zhang et al., 2025). Although risk-taking is often viewed as a stable personality trait, contextual factors can also influence it (Sevi & Shook, 2021). Individuals with greater tolerance for risk are more likely to pursue external whistleblowing, particularly when internal mechanisms are ineffective (Chang, 2025). Such actions, however, may carry serious personal and organizational repercussions. Based on these theoretical considerations, the following hypothesis is proposed.

H_3: High risk-taking propensity is positively related to external whistleblowing.

2.4. Fear of retaliation

Fear of retaliation is a major deterrent to whistleblowing behavior. Yang and Xu (2020) argue that it exerts a stronger influence on external than on internal reporting. Yet, when internal mechanisms are perceived as unsafe, fear of retaliation may paradoxically motivate external disclosure (Jeon, 2017). The perceived seriousness of wrongdoing also shapes this relationship, as less severe cases tend to involve lower perceived risk (Mulyano & Sari, 2025). Whistleblowers often weigh potential economic and psychological consequences before acting, and fear of retaliation frequently outweighs moral reasoning, discouraging disclosure even when ethical norms are violated (Liyanarachchi & Newdick, 2009). Based on these findings, the following hypothesis is proposed.

H_4: Low fear of retaliation is positively related to external whistleblowing.

2.5. Moderating role of fear of retaliation

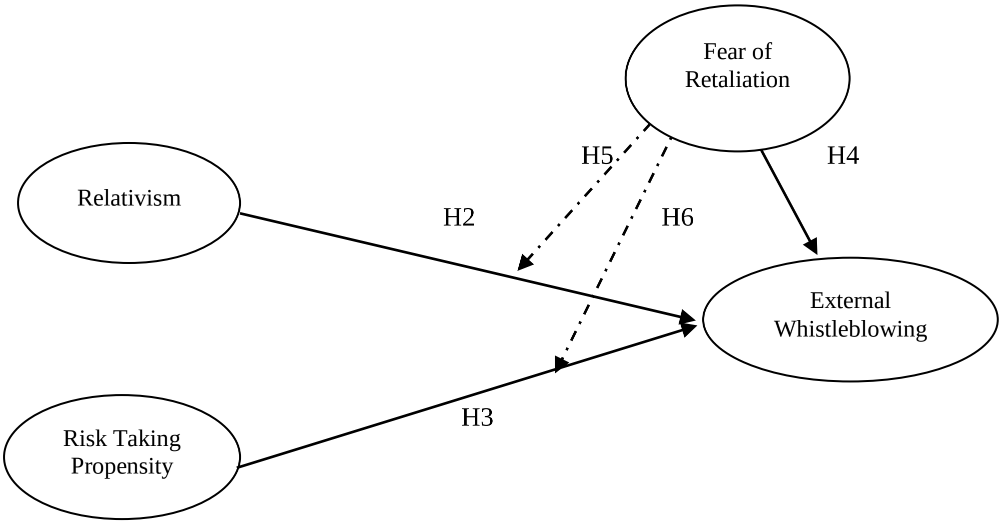
Fear of retaliation is a major barrier to reporting unethical practices, often fostering organizational silence. Although employees may feel a strong internal drive to report misconduct (Iwai et al., 2021), the threat of retaliation frequently discourages disclosure (Jones et al., 2014). Organizational culture further shapes attitudes and behaviors, either encouraging or suppressing ethical expression (Oktem & Shahbazi, 2012). Moreover, whistleblowing remains a culturally sensitive and, in many contexts, taboo topic (Ojobo, 2023). Fear of retaliation is a powerful situational cue that can either suppress or reshape ethical behavior. Relativists rely on situational information when making moral judgments; thus, high levels of fear may weaken the positive influence of relativism on whistleblowing by signaling that external reporting carries severe consequences. Based on this literature, fear of retaliation is expected to moderate the relationship between an individual's ethical convictions and their willingness to engage in external whistleblowing.

H_5: Fear of retaliation moderates the relationship between external whistleblowing and relativism.

In contexts of ethical ambiguity (Hong et al., 2020), individuals' tolerance for risk influences their decision to report misconduct. Risk-taking is a fundamental aspect of human behavior, with some actively seeking uncertainty while others avoid it (Szrek et al., 2012). Whistleblowing is often perceived as high-risk due to potential organizational backlash (Zhang et al., 2025), and whistleblowers may be seen as disloyal rather than ethical. Risk-taking propensity reflects an individual's willingness to tolerate uncertainty, yet fear of retaliation introduces a salient social and organizational threat. High fear may suppress the tendency of high-risk individuals to engage in whistleblowing by shifting the perceived balance of risks and benefits. When fear is low, risk-taking individuals may experience fewer psychological barriers to external reporting. Consequently, individuals with higher risk propensity may be more willing to engage in external reporting, although fear of retaliation may moderate this relationship.

H_6: Fear of retaliation moderates the relationship between external whistleblowing and risk taking propensity.

Figure 1: Theoretical model



Note: *Arrows in the model represent hypothesized directional relationships, while moderator effects are indicated with dashed lines
Source: Authors' research

Figure 1 illustrates the theoretical model where Relativism (H2) and Risk Taking Propensity (H3) predict External Whistleblowing. Fear of Retaliation is hypothesized to moderate these relationships (H5, H6) and also has a direct effect on External Whistleblowing (H4).

3. Methods

3.1. Scales

The Ethical Position Questionnaire (EPQ), initially developed with 20 items to measure idealism and relativism, was later refined by O'Boyle and Forsyth (2021), with the relativism dimension narrowed to five items to enhance its psychometric precision. For measuring external whistleblowing behavior, it was utilized the scale proposed by Park et al. (2008), with an additional item – "I expose misconduct on social media" – adapted from Güven (2023), resulting in a total of four items. To assess fear of retaliation, the study employed the seven-item unidimensional scale developed by Bartlett et al. (2019). Risk-taking propensity was measured using the scale introduced by Taatila and Down (2012), which consists of one dimension and six items. All items were rated using a 5-point Likert scale, ranging from "strongly disagree" (1) to "strongly agree" (5). The measurement instruments were reviewed by five experts to establish content validity, translated and back-translated for accuracy, and a pilot test was conducted with a sample of 80 to assess reliability outcomes. The second section of the survey collected demographic data. Participants were also asked to identify the most commonly observed unethical practices in the business environment and to report their typical responses to such situations.

3.2. Data collection

In Turkey, in 2023, the number of individuals directly employed in the tourism sector increased by 4.6%, reaching 998,000. The tourism sector's share of total employment stood at 3.2% (Turkish Statistical Institute, 2024). The study sample consisted of employees working in travel agencies and accommodation facilities located in Antalya. A total of 405 participants were surveyed using a convenience sampling technique. Data collection was carried out over a period extending from November 16, 2023, to April 4, 2024. The primary data analyses were performed using both SPSS 23 and AMOS software. Data were collected anonymously to protect respondent confidentiality and all participants provided informed consent.

Although surveys are commonly utilized in social science research, they are prone to common method variance (CMV) and bias, which can undermine the reliability and validity of findings (Kock et al., 2021). Surveys are particularly effective for quantifying relationships between independent and dependent variables; however, the estimation of these relationships can be distorted by shared measurement artifacts (Tehseen et al., 2017). Method variance may result in correlation bias, as individual response patterns may consistently reflect systematic tendencies that are unrelated to the constructs being measured (Baumgartner et al., 2021). To assess the presence of CMV, Harman's single-factor test was employed – a widely accepted technique for detecting method bias. This approach involves conducting an exploratory factor analysis (EFA) with all measurement items included, analyzing the unrotated factor solution to identify the number of factors with eigenvalues exceeding one, and evaluating the proportion of total variance accounted for by the first factor. According to Rodríguez-Ardura and Meseguer-Artola (2020), if CMV exists, a single factor would explain more than 50% of the total variance among items. In this study, the first factor accounted for 16.8% of the total variance, indicating that common method bias was not a significant concern.

3.3. Respondent characteristics

Table 1: Sample demographic statistics

Variable		**f**	**%**	**Variable**		**f**	**%**
Gender	Female	167	41.2	**Marital Status**	Married	227	56.0
	Male	238	58.8		Single	178	44.0
Age	19-30	112	27.7	**Type of Company**	Lodging	260	64.2
	31-50	212	52.3		Travel Agency	145	35.8
	51 or over	81	20.0	**Tenure in Sector**	1 to 5 years	114	28.1
Education	Elementary or High School	51	12.6		6 to 10 years	55	13.6
	Associate's Degree	72	17.8		11 to 15 years	45	11.1
	Bachelor's Degree	235	58.0		15 to 20 years	52	12.8
	Master Degree	47	11.6		21 or over	139	34.3
Income	Low	75	18.5	**Tenure in Company**	1 to 5 years	232	57.3
	Medium	280	69.2		6 to 10 years	78	19.3
	High	50	12.3		11 to 15 years	37	9.1
					15 or over	68	14.3

Source: Authors' research

A total of 405 tourism employees from Antalya participated in the study, comprising 238 males (58.8%) and 167 females (41.2%). Participants were aged 19–30 years (27.7%), 31–50 years (52.3%), and 51 years or older (20.0%). Regarding education, 2.2% had completed elementary school, 10.4% high school, 17.8% held associate degrees, 58.0% undergraduate degrees, and 11.6% master's degrees. In terms of income, 18.5% reported low, 69.1% moderate, and 12.3% high income levels. More than half of the participants (56.0%) were married, and 64.2% were employed in the lodging sector. The majority had over 21 years of industry experience, while 57.3% had worked at their current organization for 1–5 years. Commonly reported unethical practices included discrimination, workplace bullying, and resource mismanagement; notably, 67.2% stated that they reported such behaviors to relevant authorities.

3.4. Assessment of measurement model

According to Mishra et al. (2019), the mean serves as a core indicator of central tendency, representing the average value within a dataset and offering insight into its overall distribution. However, when working with interval or ratio-level data that do not follow a normal distribution, using the arithmetic mean may be misleading, as it is highly affected by outliers and distributional asymmetry (Kaur et al., 2018). For parametric statistical methods to yield valid results, the assumption of normality must be met. As noted by Demir (2022), data can be considered approximately normal if skewness and kurtosis values fall between -3 and +3. Table 2 outlines the skewness, kurtosis, arithmetic means, and standard deviations for each dimension examined in the study.

Table 2: Skewness and kurtosis, means, standard deviation values for subscale

Factors	**Skewness**	**Statistic**	**Kurtosis**	**Statistic**	$\bar{X}$	**sd**
External Whistleblowing	1.340	0.121	1.089	0.242	1.858	1.071
Risk Taking Propensity	-0.354	0.121	-0.348	0.242	3.386	0.965
Fear of Retaliation	0.547	0.121	0.111	0.242	2.420	0.895
Relativism	-0.441	0.121	-0.758	0.242	3.370	1.178

Source: Authors' research

The Kaiser-Meyer-Olkin (KMO) measure and Bartlett's Test of Sphericity are commonly employed to evaluate whether a dataset is suitable for factor analysis. A KMO value exceeding 0.6 is generally considered acceptable. Meanwhile, Bartlett's Test assesses the significance of correlations among variables, with a p-value less than 0.05 indicating adequacy for factor analysis (Shrestha, 2021). The specific values related to these tests for the current dataset are presented in Table 3.

Table 3: KMO and Bartlett's test results

KMO Measure of Sampling Adequacy		0.739
Bartlett's Test of Sphericity	Mean chi-square	2236.794
	Df	231
	Sig.	0.000

Source: Authors' research

During the exploratory factor analysis, several items were removed due to cross-loadings and low factor loadings. Specifically, items with significant loadings on multiple factors or with differences below the 0.20 threshold (Howard, 2016) were excluded in accordance with Guvendir and Ozkan's (2022) criterion. Additionally, items with factor loadings below 0.40 were removed following the recommendation of Sigudla and Maritz (2023). Two items that negatively affected internal consistency (Cronbach's α = 0.405) were also excluded to improve reliability, as values above 0.60 are considered acceptable (Hair et al., 2019). In addition to Cronbach's alpha, McDonald's omega (ω) coefficients were also computed. According to Orcan (2023), both alpha and omega provide highly accurate estimates of scale reliability (see Table 6). Consequently, one item from the relativism scale, two items from the fear of retaliation scale, and three items from the risk-taking propensity scale were removed. The final analysis was conducted with 16 items, as presented in Table 4.

Table 4: Factor loads

Items representing the variables		1	2	3	4
External Whistleblowing	I inform the public about the wrongdoing.	0.876			
	I report the wrongdoing to the appropriate authorities outside of the workplace.	0.816			
	I share the wrongdoing on social networks.	0.816			
	I provide information to outside agencies about the wrongdoing.	0.786			
Relativism	Questions of what is ethical for everyone can never be resolved since what is moral or immoral is up to the individual.		0.889		
	Moral standards should be seen as being individualistic; what one person considers to be moral may be judged to be immoral by another person.		0.881		
	What is ethical varies from one situation and society to another.		0.764		
	Ethical considerations in interpersonal relations are so complex that individuals should be allowed to formulate their own individual codes.		0.667		
Fear of Retaliation	After I say or do something to another person, I get nervous about possible retaliation.			0.780	
	Fearing retaliatory behavior of others often changes my actions.			0.770	
	If I see an injustice at work or school, I do not say anything because of fear of retaliation.			0.650	
	I am careful about what I do or say to others because I don't want to be retaliated against.			0.632	
	If I do something mean or bad to another, I get nervous about what that person will do next.			0.581	
Risk Taking Propensity	In general, I have a strong proclivity for high-risk projects				0.806
	I believe that owing to the nature of the environment, bold, wide-ranging acts are necessary				0.804
	When confronted with decision-making situations involving uncertainty, I typically adopt a bold, aggressive posture in order to maximize the probability of exploiting potential opportunities				0.736

Source: Dimensions were adopted from O'Boyle and Forsyth (2021), Park et al. (2008), Bartlett et al. (2019) and Taatila and Down (2012)

Confirmatory factor analysis (CFA), which is the part of structural equation modeling, depends on a well-established theoretical framework related to the construct under investigation. The first stage in this process involves assessing the measurement model. With 405 valid responses, the study meets the commonly recommended ratio of roughly ten cases per indicator for CFA, which enhances the reliability of parameter estimates and the robustness of fit indices (Stefana et al., 2025). Table 5 presents the various values and indices used for this evaluation.

Table 5: Compliance indexes and references obtained from CFA

Index	**χ2/df**	**RMSEA**	**NFI**	**CFI**	**GFI**	**AGFI**
Value	2.208	0.055	0.905	0.945	0.939	0.916
Reference range	2 ≤ x ≤ 5	0.05 ≤ x ≤ 0.08	0.90 ≤ x ≤ 0.95	0.90 ≤ x ≤ 0.97	0.90 ≤ x ≤ 0.95	0,85≤ x ≤ 1

Source: Authors' research

The reference ranges used in this study were derived from the research conducted Kimiaeimehr et al. (2020). Table 6 presents reliability and validity statistics from the CFA. Composite reliability (CR) values exceeded 0.70, supporting internal consistency. In cases where the AVE value falls below 0.50, CR can be used as a reference for assessing convergent validity, with a threshold of 0.60 (Pervan et al., 2018); accordingly, the convergent validity for fear of retaliation and risk-taking was considered acceptable. Discriminant validity was adequate, with AVE exceeding MSV (maximum shared variance). Cronbach's alpha coefficients also surpassed 0.60, confirming the reliability and structural soundness of the measurement model.

Table 6: Constructed reliability and validity analysis

Factors	**Number of Items**	**Cronbach's Alpha (α)**	**McDonald's Omega (ω)**	**CR**	**AVE**	**AVE Square Root**	**MSV**	**ASV**
External Whistleblowing	4	0.837	0.894	0.848	0.594	0.771	0.047	0.019
Relativism	4	0.823	0.879	0.832	0.562	0.749	0.035	0.018
Fear of Retaliation	5	0.717	0.815	0.727	0.355	0.595	0.038	0.040
Risk Taking Propensity	3	0.699	0.825	0.703	0.444	0.666	0.019	0.016

Source: Authors' research

The HTMT criterion, employing a threshold value of 0.85, serves as a key indicator for evaluating discriminant validity. Based on the values presented in Table 7, the constructs employed in the study demonstrate adequate discriminant validity.

Table 7: HTMT values between latent variables

Latent Variables	**1**	**2**	**3**	**4**
External Whistleblowing (1)	1			
Risk Taking Propensity (2)	0.18	1		
Fear of Retaliation (3)	0.28	0.41	1	
Relativism (4)	0.13	0.19	0.21	1

Source: Authors' research

4. Key findings

The external whistleblowing dimension recorded an average score of 1.85, indicating a generally negative attitude toward reporting wrongdoing externally among employees in the tourism sector. This finding supports the acceptance of hypothesis H1.

Table 8 displays the outcomes of the regression analysis related to the proposed hypotheses. Within this model, relativism shows a small but statistically significant effect on external whistleblowing ($R^2 = 0.025$; $p < 0.05$). Furthermore, a tendency toward risk-taking also contributes to influencing external whistleblowing behavior ($R^2 = 0.032$; $p < 0.05$). In social science research, human behavior, attitudes, and perceptions are shaped by a complex interplay of cultural, psychological, sociological, and historical factors (Fiske et al., 1998). As such, it is unreasonable to expect a single model to fully account for this complexity. Low R^2 values, therefore, do not necessarily indicate a weak model but may instead reflect the multidimensional and context-dependent nature of the phenomenon under investigation. Additionally, similar models may produce varying levels of explanatory power across different cultural settings, making the development of universally applicable models inherently challenging. Accordingly, hypotheses H2, H3, and H4 were confirmed based on the data.

Table 8: Regression analysis results

Hypotheses	**Independent**	**Dependent**	**Standard β**	**p**	**R^2**	**Adjusted R^2**	**F-Value**	**Supported/ Not supported**
H2	*R*	*EWB*	0.158	0.001	0.025	0.022	10.280	**Supported**
H3	*RTP*	*EWB*	0.178	0.000	0.032	0.029	13.234	**Supported**
H4	*FOR*	*EWB*	0.130	0.009	0.017	0.015	6.962	**Supported**

Note: R=Relativism, EWB=External Whistleblowing, RTP=Risk Taking Propensity, FOR=Fear of Retaliation

Source: Authors' research

Moderator effects were examined using Hayes' PROCESS macro Model 1, with significance determined by whether the bootstrap confidence intervals, obtained through 5,000 resamples, included zero. For the hypothesized link between relativism and external whistleblowing, the confidence interval contained zero concerning fear of retaliation, indicating that hypothesis H5 was not supported. As shown in Table 9, hypothesis H6 received support, revealing that fear of retaliation significantly moderates the association between risk-taking propensity and external whistleblowing.

Table 9: Hayes test results

Hypotheses	**Moderator**	**X and Y**	**B**	**SE**	**LLCI**	**ULCI**	**ΔR^2**	**Supported/ Not Supported**
H5	*FOR*	*R (X) EWB (Y)*	0.0537	0.0463	-0.0373	0.1448	0.003	**Not supported**
H6	*FOR*	*RTP (X) EWB (Y)*	0.1840	0.0530	0.0798	0.2882	0.028	**Supported**

Note: R=Relativism, EWB=External Whistleblowing, RTP=Risk Taking Propensity, FOR=Fear of Retaliation

Source: Authors' research

5. Discussion

Whistleblowing, while crucial for addressing or preventing wrongdoing, carries risks that may adversely affect the whistleblower's professional career, financial security, and overall well-being (Park & Lewis, 2018). Cultural variations further influence individuals' willingness or reluctance to report unethical behavior (Wozir & Yurtkoru, 2017). In the Turkish tourism sector, employees generally hold negative views toward external whistleblowing, supporting hypothesis H1. This tendency is largely explained by the higher personal and organizational costs associated with external rather than internal whistleblowing (Smaili & Arroyo, 2022), as well as a lack of trust in institutions that discourages reporting misconduct (Hüttl & Lederer, 2013). Ethical Position Theory (EPT) provides a useful lens to interpret these findings, highlighting how individuals' moral philosophies and contextual evaluations shape ethical decisions (Forsyth et al., 1988). In Turkey, maintaining confidentiality and resolving issues internally are strongly valued norms, which aligns with a relativist ethical orientation that prioritizes context-specific moral judgment over universal rules (Güven & Şahin, 2024).

The positive association between external whistleblowing and relativism (H2) can be understood in two ways. On one hand, it may reflect moral flexibility, wherein employees adapt ethical decisions to situational factors while balancing organizational and stakeholder interests. On the other hand, it could indicate contextual moral disengagement, where ethical concerns are overridden by personal or organizational calculations. In the Turkish tourism context, the findings suggest that moral flexibility is the dominant mechanism, as employees navigate between normative loyalty pressures and ethical obligations (Ismail & Yuhanis, 2018). This interpretation aligns with EPT, as relativist orientations guide moral judgment based on culturally and situationally grounded understandings rather than rigid universal norms.

Risk-taking propensity further shapes external whistleblowing intentions (H3). Individuals with a higher inclination toward risk are more willing to engage in high-stakes actions such as reporting misconduct externally, especially when internal mechanisms are perceived as ineffective (Zhang et al., 2025). This behavior reflects the integration of personality traits and ethical evaluation, as posited in EPT (Gao & Brink, 2017). While such decisions carry potential organizational and personal consequences, employees with greater risk tolerance appear more motivated by moral awareness and perceived duty than by fear of repercussions (Lowry et al., 2013).

Fear of retaliation emerges as a critical determinant of external whistleblowing (H4) and also functions as a moderator in risk-related decisions (H6). The study confirms that although fear of retaliation can inhibit whistleblowing, in certain cases it interacts with risk-taking propensity: employees who are inclined to take risks may still report misconduct externally, particularly when perceived threats are lower (Latan et al., 2021). This finding is consistent with prior research highlighting the contextual sensitivity of whistleblowing in collectivist cultures, where hierarchical norms and organizational loyalty influence ethical decision-making (Yang & Xu, 2020).

These findings have important implications for tourism management. Organizations can reconcile loyalty norms with ethical disclosure by implementing robust institutional protections, promoting anonymous reporting mechanisms, and fostering a culture that values transparency without threatening interpersonal or professional relationships. Training programs that enhance ethical awareness while considering contextual and cultural dynamics may further empower employees to engage in responsible whistleblowing. By integrating EPT and cross-cultural ethical considerations, the study provides a nuanced understanding of external whistleblowing in Turkey's tourism sector, offering insights that extend beyond descriptive reporting to interpretive and practical guidance.

6. Conclusion and recommendations

The tourism sector frequently experiences unethical practices, and in Turkey, cultural norms often discourage external whistleblowing, with formal reporting mechanisms seldom used. Similar patterns exist in many developing economies, where social expectations normalize unethical behavior, such as favoritism toward family members.

Recognizing whistleblowing as a legitimate ethical mechanism is essential for organizational accountability. However, societal acceptance and robust legal frameworks are crucial for such systems to function effectively. Individual moral frameworks shape responses to unethical situations, but contextual pressures – economic insecurity, fear of retaliation, and financial instability – often outweigh personal ethics.

Risk perception is subjective, and human behavior is influenced by both emotional states and situational factors. Even morally conscientious employees may act inconsistently under varying circumstances. Organizations also play a central role; ethical norms can be undermined if misconduct is normalized, highlighting the need for ethics training, clear guidelines, and effective internal reporting mechanisms.

A key limitation of this study is its focus on Antalya, Turkey, and only on accommodation and travel services, limiting generalizability. Future research should examine multiple regions, tourism subsectors, and cross-cultural contexts to better understand whistleblowing and ethical decision-making in the global tourism industry. SEM was used to examine the relationships among external whistleblowing, risk-taking propensity, fear of retaliation, and relativism, but it may not capture complex combinations of conditions. Future research could complement SEM with fuzzy-set Qualitative Comparative Analysis (fsQCA) to explore how these factors interact and jointly influence whistleblowing behavior, providing a more nuanced understanding of the underlying mechanisms.

6.1. Theoretical implications

This study contributes to the theoretical discourse on whistleblowing by examining individual-level predictors of external reporting behavior within the tourism sector through a culturally grounded lens. While prior research has largely emphasized organizational (Duong et al., 2025) or regulatory factors (Lee et al., 2025), this study integrates ethical relativism, risk-taking propensity, and fear of retaliation into a unified framework. The literature presents mixed evidence on the role of relativism: some findings suggest it fosters ethical flexibility that may encourage whistleblowing (Martadinata et al., 2023), whereas others indicate it undermines consistent moral standards, reducing reporting intentions (Ismail & Yuhanis, 2018). These inconsistencies likely reflect cultural variations. In Turkey's collectivist and high power-distance context, relativism may uniquely interact with whistleblowing intentions. Moreover, fear of retaliation moderates the relationship between moral judgment and behavioral intention (Zhang et al., 2025), a dynamic amplified in hierarchical cultures valuing social harmony (Güven & Şahin, 2024). Consequently, this research enriches the understanding of whistleblowing in non-Western, tourism-oriented economies by illustrating how cultural context shapes ethical decision-making, contrasting with individualistic settings where whistleblowing is more prevalent (Chang, 2025). This study's theoretical contribution is strengthened by acknowledging potential boundary conditions, such as high power-distance and collectivist cultural contexts, which may influence the observed relationships. Recognizing these conditions provides a foundation for future research to test comparative or cross-cultural extensions of the model, enhancing its generalizability across diverse tourism settings.

6.2. Practical implications

From a managerial and policy-making perspective, the study offers practical insights into fostering ethical behavior in tourism organizations operating within culturally sensitive contexts. The findings suggest that individual characteristics – such as moral philosophy and risk orientation – cannot be overlooked in the design of whistleblowing mechanisms. Ethics training programs, for instance, should be tailored to reflect varying ethical orientations and individual risk profiles, rather than relying solely on standardized corporate compliance frameworks (Kaptein, 2011). Furthermore, to encourage internal reporting, tourism enterprises should implement a strong code of conduct that promotes respectful behavior and limits incivility, especially from supervisors, while clearly communicating strict anti-retaliation policies to deter any form of retaliation (Srivastava et al., 2025).

The moderating effect of fear of retaliation underscores the necessity of institutional protections that address not only legal compliance but also psychological safety. Organizations should establish anonymous reporting systems, provide visible support to whistleblowers, and promote leadership practices that reinforce ethical behavior. These interventions are particularly vital in cultural environments where whistleblowing may be stigmatized or viewed as a betrayal of group loyalty (Chen & Zhang, 2025). In the Turkish tourism context, where interpersonal and hierarchical dynamics play a significant role in organizational life, implementing context-sensitive strategies can foster a climate of ethical accountability that aligns with cultural values. From a practical standpoint, the findings suggest several prioritized and actionable measures for tourism enterprises. First, establishing clear internal reporting mechanisms to ensure transparency; second, implementing anti-retaliation training and promoting ethical leadership; third, reinforcing legal and institutional protections for whistleblowers; and finally, tailoring ethics education programs to reflect cultural norms and risk perceptions, thereby fostering context-sensitive ethical practices within the industry.

CRediT author statement

Selda Guven: Data curation, Formal analysis, Methodology, Software, Writing – original draft, Writing – review and editing. **Ozer Alpar:** Conceptualization, Investigation, Formal analysis, Validation, Writing – original draft, Writing – review and editing. **Bayram Sahin:** Conceptualization, Project administration, Supervision, Writing – original draft, Writing – review and editing.

Declaration of generative AI in the writing process

During the preparation of this work the authors did not use generative AI and AI-assisted technologies in the writing process.

Conflict of interest

The authors declare no conflict of interest concerning this submitted work.

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Understanding burnout in the HoReCa sector: The role of personal and work-related factors

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Abstract

Purpose – This study explores what causes burnout among employees in the HoReCa sector, focusing on how factors like gender, age, education, type of employment, and work experience relate to the three key aspects of burnout measured by the Maslach Burnout Inventory. **Methodology** – Data were collected through an anonymous online survey containing profile questions and items from the Maslach Burnout Inventory. The survey was shared by HoReCa managers in Serbia, Croatia, Montenegro, and Bosnia and Herzegovina, resulting in 1,234 completed responses between January and October 2024. The data were analyzed using IBM SPSS Statistics 26.0. **Findings** – The results indicate that factors such as age, type of employment, gender, education, and work experience all contribute to shaping burnout levels among employees in the HoReCa sector. However, age and employment type emerge as the most influential, while the effects of gender, education, and work experience appear to be more subtle. **Implications** – Burnout is a multifaceted condition, shaped by individual traits and specific work experiences. Tailored interventions, addressing the specific needs of employees based on their gender, age, education, type of employment and work experience, could help mitigate burnout and improve employee well-being and performance in the HoReCa sector.

Keywords: employee well-being, burnout, depersonalization, personal accomplishment, HoReCa
JEL classification: M12, J28

Razumevanje izgaranja na poslu u HoReCa sektoru: Uloga ličnih i radnih faktora

Sažetak

Svrha – Ovaj rad istražuje uzroke izgaranja na poslu među zaposlenima u HoReCa sektoru, sa posebnim fokusom na to kako pol, starost, nivo obrazovanja, tip zaposlenja i radno iskustvo utiču na tri ključna aspekta izgaranja prema Maslaćevom inventaru izgaranja. **Metodologija** – Podaci su prikupljeni putem anonimnog onlajn upitnika koji je obuhvatio profilna pitanja i pitanja iz Maslaćevog inventara izgaranja. Upitnik je plasiran pomoću menadžera u HoReCa sektoru u Srbiji, Hrvatskoj, Crnoj Gori, Bosni i Hercegovini. U

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periodu od januara do oktobra 2024. godine ukupno je popunjeno 1234 upitnika. Prikupljeni odgovori su obrađeni i analizirani primenom softvera IBM SPSS, verzija 26.0. **Rezultati** – Pol, starost, obrazovanje, tip zaposlenja i radno iskustvo imaju uticaj na nivo izgaranja među zaposlenima u HoReCa sektoru. Starost i tip zaposlenja se izdvajaju kao faktori koji imaju izraženiji uticaj, dok pol, obrazovanje i radno iskustvo imaju nešto manji uticaj. **Implikacije** – Izgaranje na poslu je složen fenomen koji zavisi od individualnih karakteristika i specifičnih radnih iskustava. Prilagođene mere koje uzimaju u obzir specifične potrebe zaposlenih u odnosu na pol, starost, obrazovanje, tip zaposlenja i radno iskustvo mogu doprineti smanjenju izgaranja i unapređenju blagostanja i radnog učinka zaposlenih u HoReCa sektoru.

Ključne reči: blagostanje zaposlenih, izgaranje, depersonalizacija, lično dostignuće, HoReCa
JEL klasifikacija: M12, J28

1. Introduction

The HoReCa sector represents the heart of the hospitality industry, encompassing a wide range of business entities, from small, independent restaurants to large, international hotel chains (Babu et al., 2023). Employees in this sector frequently endure long working hours, including nights, weekends, and public holidays, while also managing demanding guests and facing management expectations for consistently excellent performance (Ahmad et al., 2021; Elbaz et al., 2020; Ghosh, 2022; Wallace & Coughlan, 2023). For those in direct contact with guests, the pressure to maintain a friendly and positive attitude even in stressful situations adds to the mental and emotional strain (Kim, 2008; Pienaar & Willemse, 2008). Consequently, burnout has become increasingly prevalent in the HoReCa sector, fueled by constant, unpredictable, and significant environmental changes that place considerable pressure on employees (Ayachit & Chitta, 2022; Babu et al., 2023; Baquero, 2023; Yin et al., 2022).

Burnout has profound consequences for both employees and organizations, affecting multiple aspects of well-being and performance (Lukić Nikolić & Garabinović, 2023; Prentice & Thaichon, 2019). It manifests through a range of physical, emotional, and psychological symptoms, such as fatigue, anxiety, insomnia, high blood pressure, and headaches (Nápoles, 2022). Employees suffering from burnout often show reduced energy, increased absenteeism, lower job performance, and diminished engagement, all of which contribute to higher turnover and reduced organizational effectiveness (Elbaz et al., 2020; Han et al., 2016; Lukić Nikolić & Mirković, 2023; Maslach, 1982; Wang, 2020). These outcomes are often compounded by emotional exhaustion, apathy, and feelings of powerlessness (Costin et al., 2023; Schaufeli & Enzmann, 1998), and in severe cases may extend into personal life, leading to social isolation, anger, substance abuse, and difficulties in fulfilling family responsibilities (Adamopoulos & Syrou, 2023). Prior studies have shown that burnout is linked both to personal attributes such as age, gender, and marital status, and to organizational conditions including job-related stress, lack of social support, unfair performance evaluation, and inadequate compensation (Lukić Nikolić & Garabinović, 2023; Lukić Nikolić & Mirković, 2023; Ogresta et al., 2008; Wu et al., 2021).

The aim of this study is to investigate the factors contributing to burnout among employees in the HoReCa sector, with a particular focus on the influence of gender, age, educational background, type of employment, and work experience. Burnout is examined using the three dimensions of the Maslach Burnout Inventory: Emotional Exhaustion (EE), Depersonalization (DP), and Personal Accomplishment (PA).

This study contributes to the literature by addressing an underexplored context: the HoReCa sector in Southeastern Europe. While burnout has been extensively studied in Western and Asian hospitality industries, little is known about its drivers in post-transition economies characterized by seasonal employment, job insecurity, and intense work demands (Lukić Nikolić & Garabinović, 2023). By analyzing data from four countries in the region, this research fills a gap in understanding how demographic and employment-related characteristics shape burnout in a labor market with unique structural challenges. Finally, the significance of this research lies in its potential to support organizations in the HoReCa sector in designing more targeted interventions to mitigate burnout. Identifying how personal and work-related factors influence burnout provides evidence base for differentiated human resource strategies, while also underscoring the importance of fostering supportive work environments and prioritizing psychological well-being (Allam et al., 2023).

2. Background

Burnout was initially identified as a syndrome involving negative perceptions toward clients and oneself, often accompanied by physical and emotional strain (Freudenberger, 1974). It was described as an extreme form of unmanaged stress (Hamann, 1990). Over time, researchers began to define it as a depletion of the personal resources necessary to cope with job-related pressures (Brewer & Shapard, 2004), which can result in diminished motivation, lower levels of commitment, and reduced engagement among employees (Wang, 2020). Although originally associated with caregiving and service roles, the phenomenon began gaining recognition across a broader range of professions in the 1990s (Nápoles, 2022). However, research consistently indicates that burnout is most common and intense in occupations that require high levels of interpersonal interaction (Maslach & Leiter, 1997). Occupational burnout is generally understood as a mental and emotional depletion resulting from prolonged interpersonal stress at work (Maslach et al., 2001). Key job-related and organizational factors contributing to burnout include poor working conditions, lack of job recognition (Freudenberger, 1977), work overload, limited autonomy, inadequate rewards, perceived unfairness, value conflicts (Maslach & Leiter, 1997), unclear job roles and goals, rigid organizational structures, ineffective communication (Maslach, 1982), restrictive procedures, poor leadership (Nápoles, 2022), and ambiguous job expectations with increasing responsibilities (Ali et al., 2022). As a result, burnout is defined as a work-related psychological syndrome triggered by prolonged, unmanaged stress in the workplace (Khammissa et al., 2022).

Maslach Burnout Inventory has become the most widely used and well-established instrument for evaluating burnout (Lubbadeh, 2020), using three main dimensions: Emotional Exhaustion (EE), Depersonalization (DP), and a reduced sense of Personal Accomplishment (PA) (Maslach & Jackson, 1981). EE refers to the experience of feeling emotionally drained and overwhelmed. DP involves a detached or negative response toward various aspects of one's job, where individuals distance themselves and intentionally disengage from others. A reduced sense of PA arises when individuals feel incompetent, with a diminished sense of effort and productivity in their work (Maslach et al., 2001).

Previous research suggests that gender significantly influences how employees experience and cope with workplace stress, with men and women potentially displaying different emotional responses and coping strategies. Social and cultural factors related to gender may influence the manifestation of burnout, leading to varying levels of EE, DP, and PA for men and women (Houkes et al., 2003; Lundberg & Frankenhaeuser, 1999; Maslach & Jackson, 1981). Based on these findings, the first hypothesis is proposed:

Hypothesis 1: There are significant gender differences in burnout, with males and females differing in levels of EE, DP, and PA.

Several studies suggest that personal characteristics, particularly age and the various life and career stages it represents, can significantly influence the experience of burnout. These stages can affect different dimensions of job stress, including emotional, attitudinal, and personal factors, all of which contribute to the development of burnout (Brewer & Shapard, 2004; Ramos et al., 2016). That leads to the second hypothesis:

Hypothesis 2: There are significant age-related differences in burnout, with variations in levels of EE, DP, and PA across different age ranges.

Other studies have examined the relationship between employees' level of education and their susceptibility to burnout. Some findings suggest that higher levels of education are linked to lower burnout rates, as more educated individuals often have better strategies for managing stress and greater opportunities to find a new job (Finkelstein et al., 2007; Rengering, 2016). That leads to the third hypothesis:

Hypothesis 3: There are significant education-related differences in burnout, with variations in levels of EE, DP, and PA across different educational levels.

The HoReCa sector depends significantly on seasonal labor to accommodate heightened operational demands during peak periods (Walker et al., 2020). Research shows that employment type plays a significant role in influencing burnout levels (Üngüren et al., 2024). This difference is largely due to the precarious nature of temporary employment, which is often linked to lower job security, fewer social benefits, and higher job strain. These factors can deplete personal resources, making temporary employees more vulnerable to burnout (Ferreira & Gomes, 2022). Additionally, some studies have found that seasonal employees face high levels of stress and other related health issues (Krikonis et al., 2025). Based on these findings, the following hypothesis is proposed:

Hypothesis 4: There are significant differences in burnout based on type of employment, with variations in levels of EE, DP, and PA between permanent and seasonal employees.

Studies have shown significant correlations between years of work experience and key dimensions of burnout, particularly EE and DP. This suggests that work experience may act as a mediating factor influencing these aspects of burnout (Duli, 2016). Certain studies also suggest a positive correlation between work experience and reduced DP, as well as increased PA (Hussein, 2018). Nevertheless, some studies indicate that work experience may not have a substantial effect on burnout (Knani & Fournier, 2013). Based on these mixed findings, the following hypothesis is proposed:

Hypothesis 5: There are significant differences in burnout based on working experience, with variations in levels of EE, DP, and PA across different levels of work experience.

3. Materials and methods

Research design. This study employed a quantitative, cross-sectional research design to examine burnout among employees in the HoReCa sector. Data were collected through a structured questionnaire comprising demographic, employment-related, and burnout-related items.

Sampling and participants. The target population included HoReCa employees from four Southeastern European countries: Croatia, Serbia, Montenegro, and Bosnia and Herzegovina. These countries were selected due to their shared historical, economic, and sociopolitical contexts. Although differing in development levels and political climate, they face similar challenges resulting from the post-Yugoslav transition (Lukić Nikolić & Labus, 2025).

The final sample consisted of 1,234 respondents, out of approximately 2,000 HoReCa employees invited to participate, yielding a response rate of 61.7%. This rate is considered acceptable within social science research, where response rates typically range from 30% to 70% (De Vaus, 2013). Participants represented diverse demographic and employment backgrounds, including gender, age, education, type of employment, years of professional experience, and country of current employment.

Data collection. The questionnaire consisted of two sections. The first section collected demographic and employment-related information. The second section included items from the Maslach Burnout Inventory (Maslach et al., 1996), with participants rating how often they experienced specific statements on a Likert-type scale ranging from 0 (never) to 6 (every day).

A pilot study was conducted with 35 HoReCa employees to assess clarity and comprehension of the instrument. Based on minor technical adjustments suggested by respondents, the questionnaire was refined. Reliability analysis indicated satisfactory internal consistency, with Cronbach's alpha coefficients exceeding 0.70. On average, participants required approximately 15 minutes to complete the questionnaire.

The final version of the questionnaire was distributed online using Google Forms. Data were collected between January and October 2024. To ensure confidentiality, participation was completely anonymous. The survey was distributed via email to HoReCa managers, who were asked to complete the questionnaire and forward it to their employees.

Data analysis. Data were analyzed using SPSS version 26.0, with a significance level set at $p < 0.05$. Cronbach's alpha values demonstrated high internal consistency for all scales: 0.97 for Emotional Exhaustion (EE), 0.96 for Depersonalization (DP), and 0.98 for Personal Accomplishment (PA), all well above the recommended threshold of 0.70 (DeVellis, 2003). The normality of the data distribution was tested using the Kolmogorov-Smirnov test, supported by visual inspections (histograms, boxplots, and probability plots) and measures of skewness and kurtosis. Results indicated that the normality assumption was not met (EE, $p = 0.000$; DP, $p = 0.000$; PA, $p = 0.003$). Consequently, non-parametric statistical methods were employed for hypotheses testing, specifically the Mann-Whitney U test and the Kruskal-Wallis H test. All analyses were conducted with a 95% confidence interval. In addition, Levene's test confirmed homogeneity of variance across groups ($p > 0.05$).

4. Results

Table 1 provides an overview of the key demographic and employment-related information for the respondents. The sample consists of 1,234 respondents. The gender distribution indicates a greater proportion of males (54.1%) compared to females (45.9%). Regarding education, the majority of respondents have completed secondary school (61.8%), followed by college education (21.8%), university education (14.5%), and a small portion with primary school education (1.9%). In terms of age, the largest group of respondents falls within the 30 to 50 age range (62.6%), with 23.6% being up to 30 years old and 13.8% being above 50. Geographically, respondents are primarily from Croatia (42.1%), followed by Serbia (25.1%), Montenegro (17.1%), and Bosnia and Herzegovina (15.7%). Regarding working experience, most respondents have more than 10 years of experience (46.8%), with 21.5% having 6 to 10 years of experience, 20.6% having 1 to 5 years, and 11.1% having less than 1 year of experience. The majority of respondents are employed permanently (73.3%), while 26.7% are employed seasonally.

Table 1: Key information about the respondents

Characteristic	**Answers**	**N**	**%**
Gender	Male	667	54.1
	Female	567	45.9
Education	Primary school	24	1.9
	Secondary School	762	61.8
	College	269	21.8
	University	179	14.5
Age	Up to 30	291	23.6
	From 30 to 50	773	62.6
	Above 50	170	13.8
Country	Croatia	519	42.1
	Serbia	310	25.1
	Montenegro	211	17.1
	Bosnia and Herzegovina	194	15.7
Working experience	Less than 1 year	137	11.1
	From 1 to 5 years	254	20.6
	From 6 to 10 years	265	21.5
	More than 10 years	578	46.8
Employment type	Permanently	905	73.3
	Seasonal	329	26.7

Source: Authors' research

Table 2 presents the results regarding Maslach Burnout Inventory. According to the mean scores, levels of EE (M = 16.71) and PA (M = 13.75) are classified as low, while DP (M = 7.06) falls within the moderate range among the respondents.

Table 2: Maslach Burnout Inventory – Results

Scale	**M**	**SD**	**Value**	**Category**
EE	16.71	17.53	**≤17**	**Low intensity**
			18-29	Moderate intensity
			≥30	High intensity
DP	7.06	9.49	≤5	Low intensity
			6-11	**Moderate intensity**
			≥12	High intensity
PA	13.75	14.68	**≤33**	**Low intensity**
			34-39	Moderate intensity
			≥40	High intensity

Source: Authors' research

The Maslach Burnout Inventory results, analyzed by gender and presented in Table 3, reveal notable differences in burnout dimensions. For EE, males reported a mean score of 2.82, while females had a slightly higher mean of 2.90. Median values were 2.33 for males and 2.00 for females, with no statistically significant difference between genders ($z = -0.520$, $p = 0.603$). In the DP dimension, males had a mean score of 2.46 compared to 2.35 for females, a difference that was statistically significant ($z = -2.345$, $p = 0.019$), indicating higher DP levels among men. Regarding PA, males scored a mean of 3.64, and females 3.46; median values were 4.00 for males and 3.50 for females. No significant gender difference was found for PA (z = -1.127, p = 0.260). These findings indicate that EE (p = 0.603) and PA (p = 0.260) do not differ significantly between males and females, whereas DP (p = 0.019) does, partially supporting **Hypothesis 1**. One possible explanation is that, in the observed countries, men are often primarily responsible for the family's financial security due to historical and cultural factors (Lukić Nikolić & Mirković, 2023). Under stress, men may withdraw and have difficulty expressing emotions, while placing strong emphasis on high earnings, career advancement, and challenging work. Social norms encouraging emotional detachment and goal orientation may further increase men's susceptibility to DP (Houkes et al., 2011).

Table 3: Maslach Burnout Inventory – Results regarding gender (Mann-Whitney U test)

Scale	Answers	N	M	Md	U	z	p
EE	Male	667	2.82	2.33	185867.000	-0.520	0.603
	Female	567	2.90	2.00			
DP	Male	667	2.46	1.60	175003.000	-2.345	0.019*
	Female	567	2.35	1.20			
PA	Male	667	3.64	4.00	182255.500	-1.127	0.260
	Female	567	3.46	3.50			

Source: Authors' research

The Maslach Burnout Inventory results, analyzed by age group and presented in Table 4, reveal significant differences across all three burnout dimensions. For EE, individuals up to 30 years reported a mean score of 3.26, notably higher than those aged 30–50 (2.84) and above 50 (2.25), with differences statistically significant (p = 0.000). Similarly, in DP, the youngest group scored 2.80, compared to 2.37 for the 30–50 group and 1.93 for those above 50, again showing significant differences (p = 0.000). Regarding PA, younger individuals reported the highest mean score (3.96), followed by 3.50 for ages 30–50 and 3.13 for those above 50, with all differences statistically significant (p = 0.000). Overall, younger respondents experience higher EE and DP but also report greater PA compared to older age groups. These findings support **Hypothesis 2**, confirming age-related differences in burnout across all three dimensions. Younger employees appear more susceptible to EE and DP, which may be linked to job insecurity and limited support from experienced colleagues (Edu-Valsania et al., 2022; Wielers et al., 2022). Additionally, less work experience can increase pressure to perform and meet expectations, further contributing to burnout (Lukić Nikolić & Mirković, 2023). Conversely, the higher PA among younger employees likely reflects their eagerness to learn, develop new skills, and gain professional experience, which enhances their sense of accomplishment (Vagni et al., 2020).

Table 4: Maslach Burnout Inventory – Results regarding age (Kruskal-Wallis H test)

Scale	Answers	N	M	Md	H	df	p
EE	Up to 30	291	3.26	2.56	25.777	2	0.000*
	From 30 to 50	773	2.84	2.22			
	Above 50	170	2.25	1.67			
DP	Up to 30	291	2.80	1.80	26.753	2	0.000*
	From 30 to 50	773	2.37	1.60			
	Above 50	170	1.93	1.00			
PA	Up to 30	291	3.96	4.13	16.896	2	0.000*
	From 30 to 50	773	3.50	3.88			
	Above 50	170	3.13	1.19			

Source: Authors' research

The Maslach Burnout Inventory results, analyzed by education level and presented in Table 5, reveal significant differences in EE but not in DP or PA. For EE, individuals with primary education reported the highest mean score (4.02), followed by secondary education (2.98), university education (2.64), and college education (2.55), with differences statistically significant (p = 0.007). In contrast, DP showed a gradual decrease from primary (3.17) to secondary (2.52), university (2.25), and college (2.16) education, but differences were not statistically significant (p = 0.082). For PA, the highest mean was observed among university-educated respondents (3.98), followed by primary (3.79), college (3.54), and secondary education (3.46), with no significant differences across groups (p = 0.069). These findings partially support **Hypothesis 3**. Educational level appears to influence EE, with lower-educated individuals experiencing higher exhaustion, while DP and PA are not significantly affected. Higher education may equip employees in the HoReCa sector with better problem-solving skills, access to relevant information, and adaptability to changing circumstances. Additionally, higher educational attainment often leads to more stable employment and improved financial security, which can mitigate stress and anxiety related to job instability (Krikonis et al., 2025).

Table 5: Maslach Burnout Inventory – Results regarding education (Kruskal-Wallis H test)

Scale	Answers	N	M	Md	H	df	p
EE	Primary school	24	4.02	3.89	12.055	3	0.007*
	Secondary School	762	2.98	2.33			
	College	269	2.55	1.89			
	University	179	2.64	2.22			
DP	Primary school	24	3.17	1.40	6.704	3	0.082
	Secondary School	762	2.52	1.60			
	College	269	2.16	1.20			
	University	179	2.25	1.60			
PA	Primary school	24	3.79	3.13	7.100	3	0.069
	Secondary School	762	3.46	3.50			
	College	269	3.54	4.00			
	University	179	3.98	4.63			

Source: Authors' research

The Maslach Burnout Inventory results, analyzed by employment type and presented in Table 6, reveal significant differences across all three burnout dimensions. Seasonal employees reported higher EE (M = 3.60) than permanent employees (M = 2.59), with the difference statistically significant (p = 0.000). Similarly, DP was higher among seasonal employees (M = 2.94) compared to permanent employees (M = 2.22, p = 0.000). Seasonal employees also reported greater PA (M = 4.13) than permanent employees (M = 3.35, p = 0.000), indicating that seasonal employees experience higher levels of EE, DP, and PA. These findings fully support **Hypothesis 4**, confirming that employment type influences burnout. Seasonal employees often work during peak periods characterized by long hours, high guest demand, and elevated stress, which contributes to higher EE and DP. The limited time to form strong workplace relationships may further increase DP. Despite these challenges, seasonal employees frequently report higher PA, particularly early in their tenure, due to their enthusiasm, drive to perform, and the immediate recognition they receive for their efforts. In contrast, permanent employees may experience less frequent feedback, leading to more routine work experience and comparatively lower PA.

Table 6: Maslach Burnout Inventory – Results regarding employment type (Kruskal-Wallis H test)

Scale	**Answers**	**N**	**M**	**Md**	**U**	**z**	**p**
EE	Permanently	905	2.59	2.00	106108.500	-7.772	0.000*
	Seasonal	329	3.60	3.11			
DP	Permanently	905	2.22	1.20	111862.000	-6.942	0.000*
	Seasonal	329	2.94	2.20			
PA	Permanently	905	3.35	3.00	118742.500	-5.596	0.000*
	Seasonal	329	4.13	4.38			

Source: Authors' research

The Maslach Burnout Inventory results, analyzed by years of work experience and presented in Table 7, reveal differences across the three burnout dimensions. EE showed no significant variation across experience levels (p = 0.375), with mean scores ranging from 3.03 for employees with less than 1 year of experience to 2.76 for those with more than 10 years. DP also did not differ significantly between groups (p = 0.259), with means ranging from 2.36 to 2.56 across experience categories. In contrast, PA differed significantly (p = 0.001), with employees with less than 1 year of experience reporting the highest mean score (4.12), followed by 3.76 for 1–5 years, 3.27 for 6–10 years, and 3.46 for those with more than 10 years. This indicates that less experienced employees perceive higher levels of PA compared to their more experienced counterparts. These findings partially support **Hypothesis 5**. While EE and DP are not significantly affected by work experience, PA is higher among less experienced employees. This may reflect their greater enthusiasm, higher expectations, and optimism regarding work achievements. Additionally, fewer responsibilities and lower exposure to stressors associated with longer tenure may contribute to a stronger sense of accomplishment among less experienced employees.

Table 7: Maslach Burnout Inventory – Results regarding working experience (Kruskal-Wallis H test)

Scale	**Answers**	**N**	**M**	**Md**	**H**	**df**	**p**
EE	Less than 1 year	137	3.03	2.33	3.107	3	0.375
	From 1 to 5 years	254	3.02	2.28			
	From 6 to 10 years	265	2.82	2.22			
	More than 10 years	578	2.76	2.00			
DP	Less than 1 year	137	2.45	1.80	4.019	3	0.259
	From 1 to 5 years	254	2.56	1.70			
	From 6 to 10 years	265	2.36	1.40			
	More than 10 years	578	2.36	1.40			
PA	Less than 1 year	137	4.12	5.00	16.779	3	0.001*
	From 1 to 5 years	254	3.76	4.00			
	From 6 to 10 years	265	3.27	3.00			
	More than 10 years	578	3.46	3.69			

Source: Authors' research

5. Discussion

The findings of this study (presented in Table 2) indicate that employees in the HoReCa sector are not experiencing extreme levels of burnout overall. However, the presence of moderate DP, despite low EE and PA, is noteworthy. This suggests that employees may adopt emotional distancing as a coping mechanism—an early warning sign of potential burnout escalation. If unaddressed, such detachment could undermine motivation, engagement, and job satisfaction, ultimately affecting service quality, guest experience, and organizational performance. These results highlight the importance of proactive interventions targeting DP, including supportive management practices, well-being programs, and strategies that strengthen employee engagement and connection to work.

Table 8 summarizes the results of the hypotheses examined in this research.

Table 8: Summary results of hypotheses testing

Hypothesis	Test	p-values	Decision
Hypothesis 1: There are significant gender differences in burnout, with males and females differing in levels of EE, DP, and PA.	Mann-Whitney U test	EE (p= 0.603) DP (p= 0.019*) PA (p= 0.260)	Partially supported
Hypothesis 2: There are significant age-related differences in burnout, with variations in levels of EE, DP, and PA across different age ranges.	Kruskal-Wallis H test	EE (p= 0.000*) DP (p= 0.000*) PA (p= 0.000*)	Supported
Hypothesis 3: There are significant education-related differences in burnout, with variations in levels of EE, DP, and PA across different educational levels.	Kruskal-Wallis H test	EE (p= 0.007*) DP (p= 0.082) PA (p= 0.069)	Partially supported
Hypothesis 4: There are significant differences in burnout based on employment type, with variations in levels of EE, DP, and PA between permanent and seasonal employees.	Kruskal-Wallis H test	EE (p= 0.000*) DP (p= 0.000*) PA (p= 0.000*)	Supported
Hypothesis 5: There are significant differences in burnout based on working experience, with variations in levels of EE, DP, and PA across different levels of work tenure.	Kruskal-Wallis H test	EE (p= 0.375) DP (p= 0.259) PA (p= 0.001*)	Partially supported

Source: Authors' research

Age and employment type emerged as the most influential predictors of burnout. Younger and seasonal employees reported higher EE and DP, while in some cases also demonstrating higher PA. This pattern underscores the multidimensional nature of burnout, where EE, DP, and PA are shaped by distinct individual and work-related factors. Gender, education, and work experience had more subtle, context-dependent effects but still contributed to variation, reflecting the complex interplay between personal traits, job demands, and social expectations.

When compared with prior research, these results both support and extend existing frameworks. Higher burnout among younger employees aligns with studies linking job insecurity, limited experience, and high-performance pressures to occupational burnout (Edu-Valsania et al., 2022; Wielers et al., 2022). The observed gender differences in DP – but not in EE or PA – partially contradict research suggesting women are generally more prone to emotional strain (Houkes et al., 2011), indicating that regional and cultural factors, such as traditional gender roles in Southeastern Europe, may shape burnout manifestations. Additionally, the protective role of education in reducing EE corroborates previous findings that knowledge and problem-solving skills can buffer against occupational stress (Krikonis et al., 2025).

The results can be interpreted through established burnout frameworks. According to Maslach's model, burnout arises from chronic workplace stress, with EE, DP, and PA representing distinct but interrelated components. The findings from this research support this conceptualization, as the three dimensions did not always move in parallel. Younger and seasonal employees exhibited high EE and DP alongside elevated PA, suggesting that employees can maintain a sense of effectiveness even under stress and emotional detachment. The multidimensionality of burnout also explains why EE, DP, and PA behave differently across subgroups. EE and DP are closely tied to stress exposure and job demands, particularly for younger and seasonal employees, whereas PA is influenced by perceived competence, achievement, and feedback, which can remain high even under stress. This highlights that universal approaches to burnout prevention may be insufficient, and interventions should be tailored to employee subgroups based on age, employment type, education, and work experience.

6. Conclusion

The findings of a research involving 1,234 employees from the HoReCa sector in four Southeastern European countries (Serbia, Croatia, Montenegro, Bosnia and Herzegovina) from January to October 2024 highlight that demographic and employment-related factors such as gender, age, education, employment type, and work experience play significant roles in shaping burnout levels. This implies that burnout is a multifaceted condition, shaped by individual traits and specific work experiences.

This study has several implications for both theory and practice. The theoretical implications of this study show that understanding burnout requires considering personal traits and work conditions. Since burnout is influenced by many factors, the research suggests using broader theories that combine psychological, organizational, and cultural views to better explain how it develops in different work environments. From a practical standpoint, these results suggest that one-size-fits-all approaches to employee well-being are insufficient. Human resource strategies should be differentiated to reflect the particular needs of distinct employee groups. For instance, research results indicate that younger and seasonal workers reported higher levels of emotional exhaustion, highlighting the importance of providing stronger emotional support, mentoring, and greater job security for these groups. Conversely, employees with longer work experience demonstrated patterns consistent with reduced personal accomplishment, underscoring the need for career development opportunities, recognition programs, and mentorship roles to sustain engagement and motivation. Beyond the immediate regional context, the findings hold broader relevance for countries with comparable labor market dynamics and hospitality industry structures, such as those in Southern and Eastern Europe or other transition economies where seasonal employment, limited job security, and high work intensity are common. In such environments, similar demographic and employment-related risk factors for burnout are likely to emerge, making targeted and responsive human resource interventions equally important.

A key limitation of this study is the reliance on self-reported data, which may be affected by participants giving socially desirable answers or misjudging their own burnout levels. Future research could improve accuracy by including more objective measures, like supervisor evaluations or physical signs of stress. Another limitation is that the study focused only on HoReCa employees from four Southeastern European countries, which may not reflect burnout patterns in other industries or regions. To make the findings more widely applicable, future research should include a more diverse range of sectors and locations to explore industry-specific burnout trends.

CRediT author statement

Pero Labus: Software, Methodology, Conceptualization, Investigation, Supervision. **Jelena Lukić Nikolić:** Writing – original draft, Writing – review & editing, Formal analysis.

Declaration of generative AI in the writing process

During the preparation of this work the authors did not use generative AI and AI-assisted technologies in the writing process.

Conflict of interest

The authors declare no conflict of interest.

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Tourism dynamics in South-East Europe: Similarities and predictability

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Abstract

Purpose – This study investigates the dynamics and common tourism patterns of selected countries in South-East Europe in the post-COVID-19 period. The main goal is to classify the countries by inter-country similarities and differences in tourist flows while assessing predictability in tourism demand across the region. **Methodology** – The research analyzes monthly tourist arrivals for the period 2022–2025 in Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Greece, Montenegro, North Macedonia, Serbia, and Slovenia. It employs K-means and Density-Based Spatial Clustering of Applications with Noise (DBSCAN) clustering to identify time series patterns, while a Seasonal AutoRegressive Integrated Moving Average (SARIMA) panel data model provides a one-year forecast to 2026. **Findings** – Results reveal three groups: Cluster 0 (Albania, Bulgaria, Croatia, North Macedonia, Slovenia) with similar patterns; Cluster 1 (Bosnia and Herzegovina, Greece, Montenegro); and Serbia as an outlier. Seasonality is lowest in Serbia and highest in Albania and Bulgaria. Forecasts predict the largest growth in Albania (21%), moderate gains in Bosnia and Herzegovina, Bulgaria and Montenegro (6-8%), modest increases in Serbia and Greece (2-3%), slow growth for Croatia (1%) and stagnation for North Macedonia. **Implications** – This research advances the literature on regional tourism forecasting and supports policymakers in targeting low-seasonality destinations for stable planning and high-growth areas for capacity expansion, enhancing tourism resilience of South-East Europe.

Keywords: tourism dynamics, regional planning, seasonality index, SARIMA forecasting
JEL classification: Z32, C53, R11

Turistička dinamika u jugoistočnoj Evropi: Sličnosti i predvidivost

Sažetak

Svrha – Ova studija istražuje dinamiku i zajedničke obrasce turizma odabranih zemalja u jugoistočnoj Evropi u periodu nakon pandemije COVID-19. Glavni cilj je klasifikacija zemalja prema međusobnim sličnostima i razlikama u protoku turista, uz procenu predvidivosti potražnje za turizmom u regionu. **Metodologija** – Istraživanje analizira mesečne dolaske turista za period 2022–2025. godina u Albaniji, Bosni i Hercegovini,

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Bugarskoj, Hrvatskoj, Grčkoj, Crnoj Gori, Severnoj Makedoniji, Srbiji i Sloveniji. Rad koristi K-means i Density-Based Spatial Clustering of Applications with Noise (DBSCAN) klasterizaciju za identifikaciju obrazaca vremenskih serija, dok Seasonal AutoRegressive Integrated Moving Average (SARIMA) panel model omogućava prognozu za 2026 godinu. **Rezultati** – Rezultati otkrivaju tri grupe: Klaster 0 (Albanija, Bugarska, Hrvatska, Severna Makedonija, Slovenija) sa sličnim obrascima; Klaster 1 (Bosna i Hercegovina, Grčka, Crna Gora); i Srbija kao odstupanje. Sezonalnost je najniža u Srbiji, a najviša u Albaniji i Bugarskoj. Prognoze predviđaju najveći rast u Albaniji (21%), umeren rast u Bosni i Hercegovini, Bugarskoj i Crnoj Gori (6-8%), minimalni rast u Srbiji i Grčkoj (2-3%), spor rast u Hrvatskoj (1%), te stagnaciju u Severnoj Makedoniji. **Implikacije** – Ovo istraživanje daje doprinos literaturi o regionalnom prognoziranju turizma i pruža podršku donosiocima odluka. Konkretno, usmerava ih ka destinacijama sa niskom sezonalnošću radi stabilnog planiranja i ka oblastima visokog rasta radi proširenja kapaciteta, čime se jača otpornost turizma u jugoistočnoj Evropi.

Ključne reči: dinamika turizma, regionalno planiranje, indeks sezonalnosti, SARIMA prognoziranje
JEL klasifikacija: Z32, C53, R11

1. Introduction

The global tourism landscape has experienced a marked transformation following the disruptions of the COVID-19 pandemic. Notably, even before the World Health Organization officially declared the end of the public health emergency on May 5, 2023, some destinations had already reported tourist arrivals and overnights surpassing 2019 levels. Yet, behind the numbers, there was a behavioral shift that created a ‘new normal’ for travelers and tourists (Zenker & Kock, 2020).

While Europe has remained the dominant player in global tourism for decades, even in the post-pandemic era, recovery in South-East Europe was “fragmented” and tied to the geographic advantages and income levels of individual countries (Malaj et al., 2025). This recovery has been defined by significant regional heterogeneity (Gajić et al., 2023), resulting in variations in the sustainability of travel and tourism across national borders (Lazarević et al., 2024; Lazarević & Stanišić, 2023). Generally, South-East Europe was framed within the broader European recovery trend, specifically regarding the move toward more sustainable, less volatile tourism models (Gössling et al., 2020). Such a transition was a necessity rather than a simple “return to business as usual” (Nientied & Shutina, 2020), as the region’s overall sustainability depended heavily on its capacity to adapt to external shocks. The post-pandemic era required destinations to move beyond mass-market models toward personalized tourist supply, generally based on digital and sustainable practices (Bešić et al., 2024). This required destinations to evolve from simple locations into complex systems (Jovićić, 2019), as the tourism industry was approaching a long-term structural change requiring sophisticated tools to address post-crisis data volatility (Škare et al., 2021).

South-East Europe represents a complex area with significant, often underutilized tourism potential. The countries share geography, historical ties (Orthodox Christianity dominant in Bulgaria, Greece, Serbia, Montenegro, North Macedonia), Catholicism (Croatia and Slovenia), and Islam (Albania and Bosnia and Herzegovina); many formed former Yugoslavia (Bosnia and Herzegovina, Croatia, Montenegro, North Macedonia, Serbia, and Slovenia). They also have common cultural patterns in similar cuisines (e.g., grilled meats, burek), folk music/dances and maintain regional economic and political links.

On the other hand, the selected South-East European countries differ significantly in tourism development. Some have sea-access and high tourism volumes (Bulgaria, Croatia, and Greece); others are landlocked and rely on inland attractions (North Macedonia, Serbia), or possess a short coastline (Bosnia and Herzegovina) and still-modest tourism contribution to the national economy. This divergence, intensified by varied recovery speeds in the post-pandemic period, prompts a critical inquiry into specific regional developmental patterns.

Rather than assessing which country possesses the greatest capacity to accommodate tourists, this analysis focuses on identifying similarities and divergences in the distribution of tourist flows across the region. Assuming a given volume of arrivals to South-East Europe, this study explores how these visitors are allocated among individual countries. Furthermore, while all examined countries exhibit seasonality, notable variations in the degree and patterns of these fluctuations are observed. This necessitates a deeper investigation into the regional allocation of demand, which adds novelty to this research. Although Zenker and Kock (2020) highlighted the need for new research agendas post-COVID, this study applies those concepts to the selected countries of South-East Europe by identifying the specific clusters that emerged from the crisis. While previous studies have generally investigated tourism dynamics in Western Balkan countries (Bučar, 2017; Knežević et al., 2024; Lazarević et al., 2024; Lazarević & Stanišić, 2023; Nientied & Shutina, 2020; Selimi et al., 2017), this study adopts a broader regional context and investigates nine sampled countries: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Greece, Montenegro, North Macedonia, Serbia, and Slovenia. Specifically, it addresses two central research questions (RQs):

RQ_1: What are the similarities and differences in tourism dynamics?

RQ_2: Are there shared patterns in predicting tourism demand?

The paper is structured into five sections. Following this introduction, a literature review contextualizes South-East Europe tourism sector, followed by background material providing stylized facts on post-pandemic recovery. The methodology section details the applied methods for clustering and predictive modeling. The section on results and discussion presents empirical findings, visualizations, and forecasted values. Finally, the paper concludes with a synthesis of the findings.

2. Background material: Contextualizing the tourism sector of South-East Europe

In the academic literature, most studies treat Balkan countries as isolated cases or focus exclusively on Western Balkan countries when analyzing post-pandemic recovery. Nientied and Shutina (2020) discuss the necessity of transforming the Western Balkans to meet the new normality after the pandemic. Due to the region's heterogeneity, the authors emphasize the need to develop policies and practices for sustainable tourism and to build up the Western Balkans as an integrated destination.

In the same context, Malaj et al. (2025) identify income levels, geographic proximity, and the pandemic as primary determinants of tourism demand for Western Balkan countries. This supports the notion that recovery is tied to specific geographic advantages and digital readiness. Countries with robust domestic and regional markets adapt more smoothly to the challenging new environment, where travelers prioritize nature-based destinations and shorter-haul regional trips.

Recent scholarship also emphasizes that post-pandemic competitiveness is no longer driven solely by traditional geographical assets, but by the ability to offer sustainable and digitally integrated experiences (Bešić et al., 2024). This is particularly reflected in the shift toward "personalized" tourism – a strategy that may help explain why emerging markets (e.g., Albania) exhibit stronger growth dynamics, while more established destinations (e.g., Croatia) face characteristics associated with market maturity. This is further reflected in the varying levels of sustainability and resilience across national borders. Lazarević et al. (2024) illustrate how global crises impact Southern and Mediterranean Europe differently. Their findings suggest that demand pressure and socioeconomic resilience in countries like Serbia and North Macedonia are intrinsically linked to their sustainability profiles. Ultimately, the use of sophisticated analytical tools is necessary to handle post-crisis data volatility as the tourism sector in South-East Europe navigates the balance between rapid growth and long-term structural viability.

In addition to the general academic discussion contextualizing the tourism sector of South-East Europe, a significant theoretical gap remains, particularly regarding comparative research on how these countries compete for the same regional pool of tourists. This research aims to fill that gap by investigating nine countries: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Greece, Montenegro, North Macedonia, Serbia, and Slovenia.

Table 1: Tourist flows compared to 2019 level

Year	Country	Arrivals		Overnights	
		Index	Recovery year	Index	Recovery year
2022	Albania	1.074840	2022	1.177631	2022
2023		1.414897		1.846627	
2024		1.627841		2.288581	
2023	Bosnia and Herzegovina	1.069363	2023	0.993134	2024
2024		1.179469		1.098833	
2023	Bulgaria	1.006006	2023	0.890361	Not yet
2024		1.055552		0.926902	
2021	Croatia	1.036217	2021	0.769379	2023
2022		1.092728		0.986794	
2023		1.14332		1.012395	
2024		1.228861		1.026719	
2022	Greece	1.140668	2022	1.192504	2022
2023		1.299315		1.322439	
2024		1.349093		1.373957	
2023	Montenegro	1.110541	2023	1.085633	2023
2024		1.121255		1.103228	
2024	North Macedonia	1.063683	2024	1.01083	2024
2022	Serbia	1.048578	2022	1.215651	2022
2023		1.136265		1.23504	
2024		1.201293		1.257001	
2023	Slovenia	0.994098	2024	1.022167	2023
2024		1.056778		1.068318	

Source: Authors' calculations based on: Agency of Statistics of Bosnia and Herzegovina. (n.d.), Croatian Bureau of Statistics. (n.d.), Hellenic Statistical Authority. (n.d.), Institute of Statistics of Albania. (n.d.), National Statistical Institute of Republic of Bulgaria. (n.d.), State Statistical Office of the Republic of North Macedonia. (n.d.), Statistical Office of Montenegro. (n.d.), Statistical Office of the Republic of Serbia. (n.d.), Statistical Office of the Republic of Slovenia. (n.d.)

Before addressing the RQs, it is necessary to identify when each sampled country returned to pre-COVID-19 levels of tourism development. Table 1 presents calculated growth indices for arrivals and overnights for the period 2021-2024, revealing that each of the sampled countries followed a distinct recovery timeline. This variation is primarily driven by coastal access and Mediterranean appeal. Coastal destinations generally recovered faster due to high demand for "sun and sea" tourism, while inland destinations often lagged, relying more heavily on domestic visitors.

Based on Table 1, the recovery dynamics for each country is discussed. Albania reached pre-pandemic levels for both arrivals and overnights in 2022. This rapid recovery is attributed to its long Mediterranean coastline, which attracts budget seekers for beach tourism. Along with Greece and Serbia, Albania experienced the fastest overnight growth in the region. By 2024, the number of tourists was 62.78% higher than in 2019, indicating high demand and infrastructure improvements. Despite a slow start in 2020, arrivals in Bosnia and Herzegovina reached pre-2019 levels in 2023 (1.07), while overnights followed in 2024 (1.10). Limited Adriatic access slowed its recovery, being mainly based on regional visitors.

Although it is a coastal destination, Bulgaria only recovered its arrival numbers in 2023 (1.01), but overnight levels remain unmet. For a Mediterranean country, Bulgaria experienced surprisingly slow recovery. Croatia recorded the fastest increase in arrivals among all sampled countries, exceeding 2019 levels in 2021, generally due to its favorable Adriatic coastline. However, overnights did not recover until 2023, suggesting shorter average stays. Like Albania, Greece surpassed pre-2019 arrivals and overnights in 2022 (1.14/1.19). This quick rebound from a low 2020 base was due to high demand for coastal tourism after intense lockdowns, driven by shifts in traveler psychology and safety concerns (Zenker & Kock, 2020).

Montenegro performed better than Bulgaria, but lagged behind Croatia, Albania, and Greece. Both arrivals and overnights exceeded 2019 levels in 2023. The slowest recovery was for North Macedonia, which reached 2019 levels only in 2024 for both arrivals and overnights. It ranks last in the region due to a lack of sea access, a weak international draw, and delayed effects of economic reopening. Arrivals and overnights in Serbia recovered in 2022, matching Albania and Greece. As a top inland destination, Serbia demonstrated a "non-conformist" resilience and an excellent early recovery by leveraging rural and localized demand (Gajić et al., 2023). Finally, Slovenia achieved full recovery of overnights in 2023 and arrivals in 2024. It recorded a modest growth (6.83%) in 2024, indicating a steady rebound.

Ultimately, it is evident that sampled South-East European countries exhibited varying recovery timelines to reach 2019 levels of tourism development. Croatia (arrivals), Albania, Greece, and Serbia emerged as the most resilient destinations and early achievers (2021-2022), demonstrating the strongest upward growth trajectories. Furthermore, Bosnia and Herzegovina (arrivals), Bulgaria (arrivals), and Montenegro constituted the mid-phase recovery group (2023). Finally, Slovenia and North Macedonia were identified as late rebounders (2024). This evidence reveals a fragmented recovery across the South-East region, characterized by sharp contrasts and diverse tourism patterns.

3. Methodology

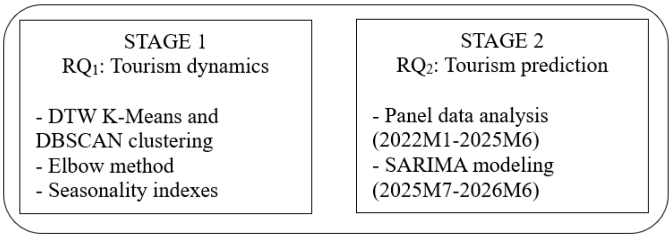
The research is based on a quantitative approach using data on monthly tourist arrivals and overnights for the period January 2022 to June 2025 from the national statistical offices of the selected South-East European countries.

Figure 1 illustrates the two-stage methodology, incorporating multiple methods:

1) Stage 1. Classifying countries by inter-country similarities and differences in tourism flows, and

2) Stage 2. Assessing predictability in tourism demand across the region (RQ_2).

Figure 1: Research framework



Source: Authors' research

Stage 1 addresses RQ_1 by examining tourism dynamics across the regional destinations by employing three methods:

(1) Dynamic Time Warping (DTW) K-Means and Density-Based Spatial Clustering of Applications with Noise (DBSCAN). The analysis was conducted in Google Colab using the Python programming language. The K-Means algorithm uses Euclidean distances, iteratively minimizing within-cluster sums of squared distances to centroids (cluster means). DBSCAN detects arbitrary-shaped clusters using an ε-distance parameter without pre-specifying the cluster count, though less scalable for large datasets.
(2) The elbow method graphically shows the optimal number of clusters at the point where the within-cluster sum of squares decreases slowly; and
(3) Seasonality indices are computed as monthly values divided by the series mean, with only those months where the index value is greater than 1 being counted. The more months with a value greater than 1, the lower the seasonality.

This integrative approach groups the nine-country time series based on the shape of their evolution over time, not just their raw magnitude. The academic literature discusses classification and modeling of time series in the field of tourism (Agustina et al., 2023; Andreeski & Mechkaroska, 2020; Lascu et al., 2018; Suzuki et al., 2011).

Stage 2 addresses RQ_2 by predicting tourism demand and identifying shared patterns among the sampled countries of South-East Europe. This uses panel data analysis (2022M1-2025M6) to identify shared patterns, while tourism demand is forecasted with Seasonal AutoRegressive Integrated Moving Average (SARIMA) modeling (2025M7-2026M6).

4. Results and discussion

Results are presented and discussed in a twofold manner to better address the research questions.

4.1. Regional tourism dynamics

Table 2 presents the results of time series classification using min-max scaling normalization to ensure all features contribute equally to the clustering process. This scaled data helps K-Means to converge faster and more reliably. Additionally, DBSCAN clusters were formed by identifying regions of high density separated by regions of lower density. This was achieved by calculating the ε parameter as the maximum distance between normalized data points, with the minimum cluster size set to 2 countries. Thus, Table 2 presents two clusters numbered as Cluster 0 and Cluster 1, while the countries labeled as -1 are considered outliers. They cannot be classified with other countries based on the input parameters.

Table 2: Results of the K-Means and DBSCAN time series classification

Country	K-Means	DBSCAN
Albania	0	0
Bosnia and Herzegovina	1	-1
Bulgaria	0	0
Croatia	0	-1
Greece	1	1
Montenegro	1	1
North Macedonia	0	0
Serbia	2	-1
Slovenia	0	0

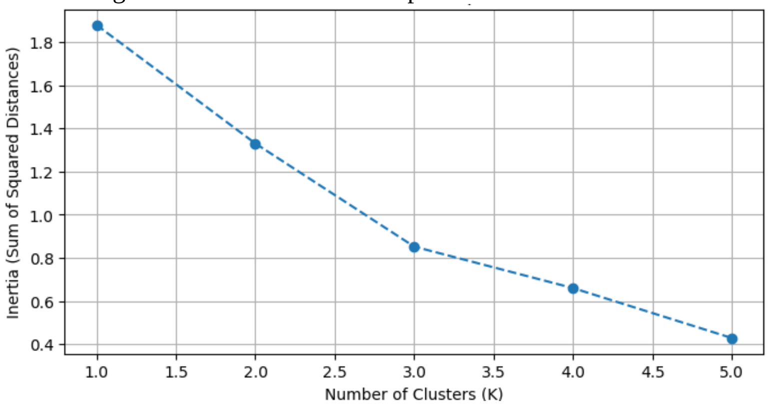
Source: Authors' research

Furthermore, Figure 2 visually presents the results of the elbow method used to determine the optimal number of clusters. A noticeable decline in inertia, i.e., the sum of squared distances from each data point to its closest cluster center, is observed. The rate of error decay significantly slows after number three, identifying this as the optimal number for the analysis (Agustina et al., 2023; Suzuki et al., 2011).

According to Figure 3, the countries are grouped into the following three clusters:

- Cluster 0: Albania, Bulgaria, Croatia, North Macedonia, and Slovenia.
- Cluster 1: Bosnia and Herzegovina, Greece, and Montenegro, and
- Cluster 2: Serbia.

Figure 2: Elbow method for optimal number of clusters



Source: Authors' research

Based on the clustering results from the DBSCAN algorithm, Cluster 0 (Albania, Bulgaria, North Macedonia, and Slovenia) is the largest and most diverse group. The analysis also reveals that Croatia exhibits a marked deviation from the series values associated with these four countries, thereby distinguishing its trajectory from the rest of the cluster. It is notable that this cluster groups an early achiever such as Albania with a late rebounder like North Macedonia. This suggests that while their recovery speeds varied, the "shape" of their recovery curves – marked by a sharp 2020 drop followed by a consistent, multi-year upward trajectory – is mathematically analogous. More precisely, when the data are normalized through min-max scaling, the underlying pattern of growth across these five countries is statistically similar, even if their total volume or specific recovery years differ. These findings are consistent with previous studies highlighting fragmented and heterogeneous recovery patterns (Gajić et al., 2023; Malaj et al., 2025), confirming that post-pandemic tourism dynamics are shaped by structural and geographical differences.

On the other hand, Bulgaria, North Macedonia, and Slovenia did not experience immediate growth. Instead, they exhibited steady, stabilizing patterns, leading to their identification as a single coherent unit. Figure 3 presents the normalized values of their time series, with Croatia showing the largest deviation. While other countries showed a more gradual climb, Croatia's normalized curve lay consistently higher in the early stages of the time series.

Figure 3: Normalized time series – Cluster 0

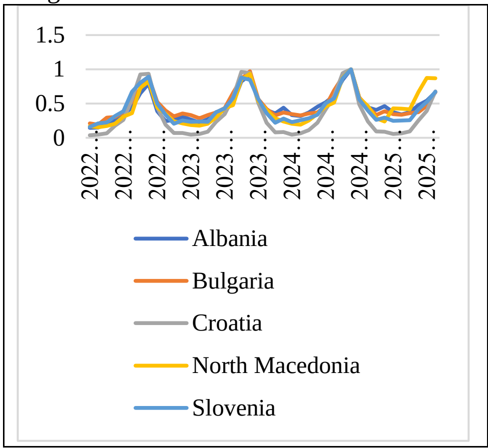
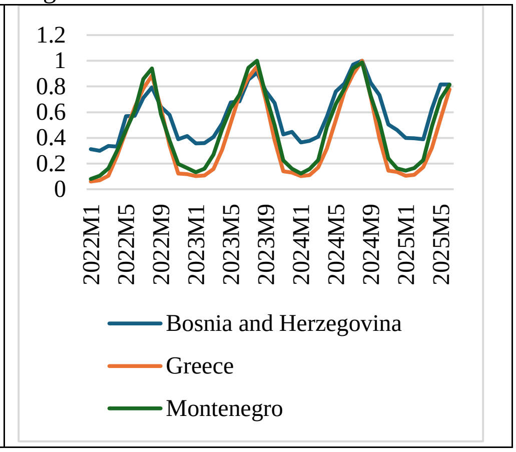


Figure 4: Normalized time series – Cluster 1



Source: Authors' research

Figure 4 illustrates the normalized time series for the countries in Cluster 1: Greece, Montenegro, and Bosnia and Herzegovina (as an outlier). There is a significant visual overlap between the trajectories of Greece and Montenegro, with a slight deviation observed in Bosnia and Herzegovina. Nevertheless, K-Means analysis indicates that the mathematical distances between these three series are the smallest, leading to their grouping in a joint cluster. While Greece and Montenegro shared a “sun and sea” recovery, the inclusion of Bosnia and Herzegovina suggests that despite its slower start in 2020, its normalized growth trajectory eventually mirrored the recovery shape of Montenegro.

Serbia is placed in Cluster 2, representing a unique recovery pattern that does not fit within the high-density region of other groups, with an exceptional recovery performance, comparable to top coastal destinations (rebounding fully by 2022) despite being an inland destination.

To understand the implications of the identified differences, seasonality indices were calculated. This enabled the identification of countries with lower seasonality and allowed for ranking them from the least seasonal to the most seasonal destinations.

Table 3 presents calculated seasonality indices based on the number of months with values greater than 1. In this context, a higher value is preferable, as it represents lower seasonality. Serbia has the highest value (22), identifying it as the country with the lowest seasonality with tourism demand more evenly distributed across months and exhibiting narrower fluctuations between its minimum and maximum values. The lower standard deviation in monthly figures reinforces Serbia's position as a more resilient destination against seasonal shocks. Unlike other coastal destinations in South-East Europe, its tourism development is not threatened by a single season, allowing for a stable distribution of demand and high growth. These findings align with the observations of Škare et al. (2021) regarding the stabilization of regional demand over international long-haul volatility.

Table 3: Seasonality indices

Country	Index
Serbia	22
Montenegro	21
Bosnia and Herzegovina	19
North Macedonia	19
Greece	18
Slovenia	17
Croatia	16
Albania	15
Bulgaria	13

Source: Authors' research

Interestingly, the second-ranked country is Montenegro (21), which exhibits lower seasonality than other coastal destinations, such as Greece (18) or Croatia (16). This suggests that Montenegro has diversified its tourism supply beyond high summer peaks. Yet, despite concentrated demand and their pronounced seasonal character, Greece and Croatia recovered quickly. This is particularly noticeable in the shorter-stays trend in Croatia, where arrivals recovered faster than overnights. Next are Bosnia and Herzegovina and North Macedonia (19), along with Slovenia (17). The same finding of low seasonality, which offers no substantial benefit to tourism development in North Macedonia, was previously evidenced by Petrevska (2013) and Trajkov et al. (2016), who argued that the country produces permanently modest tourism results. The most pronounced seasonal character is found in the tourist arrivals for Albania (15) and Bulgaria (13). Bulgaria is the most seasonal destination among the sampled countries. It has highly concentrated tourism demand in the summer season, resulting in a more polarized distribution, indicating its vulnerability to off-season volatility.

4.2. Shared patterns and predictive tourism modeling

To predict tourism demand, the data were organized into a single panel. Due to their distinct seasonal character, an upward trend, and heteroscedasticity within the series, prior to modeling, a cross-sectional dependence test was performed to determine their stationarity (Table 4). The series were first logarithmized, followed by second-order differencing.

Table 4: Cross sectional dependence: Pesaran – CIPS test

Cross unit root test Null hypothesis: Unit root Test results:		
Statistic	t-stat	p-value
CPS:	-5.63595	<0.01
Truncated CIPS:	-5.11380	<0.01
Critical values:		
Level	CIPS	Trunc.CIPS
1%	-2.56	-2.56
5%	-2.33	-2.33
10%	-2.21	-2.21

Cross-sectional ADF unit root test Null hypothesis: Unit root for specidied cross-section Lag selection: AIC with maxlag=6					
Test results		CADF		Truncated	CADF
Cross-section	ADF lags	t-stat	p-value	t-stat	p-value
1	4	-6.1552	<0.01	-6.1552	<0.01
2	6	-4.2592	<0.01	-4.2592	<0.01
3	3	-10.598	<0.01	-10.598	<0.01
4	6	-5.9717	<0.01	-5.9717	<0.01
5	5	-6.4811	<0.01	-6.4811	<0.01
6	6	-3.9011	<0.05	-3.9011	<0.05
7	6	-5.8241	<0.01	-5.8241	<0.01
8	6	-4.8483	<0.01	-4.8483	<0.01
9	6	-4.2971	<0.01	-4.2971	<0.01
Critical values:					
Level	CADF	Trunc. CADF			
1%	-4.03	-4.03			
5%	-3.33	-3.33			
10%	-2.96	-2.96			

Source: Authors' research

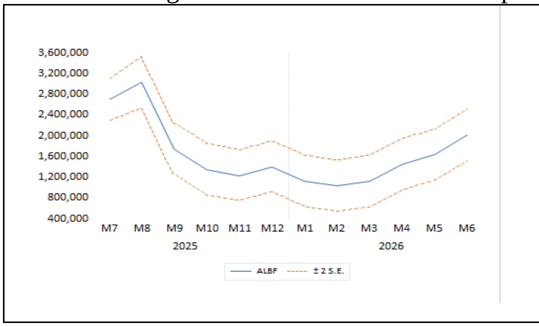
As shown in Table 5, the probability that the series were non-stationary was less than 1%, that is, the series were confirmed to be stationary following these transformations. During the modeling process, the 12th lag in the correlogram was identified as a critical component for defining seasonal patterns. After testing various parameters, such as SAR(12) and AR(1), the final specification was SARIMA(1,2,0)(1,0,0) model. As shown in Table 6, the model parameters indicate a good fit, evidenced by significance levels below 1%, a high R2, and an adjusted R2 exceeding 0.8. Furthermore, the Durbin-Watson statistic was close to 2.0, indicating an absence of serial correlation in the residuals, while the low absolute values of the information criteria further supported the accuracy of the model.

Table 5: Model parameters

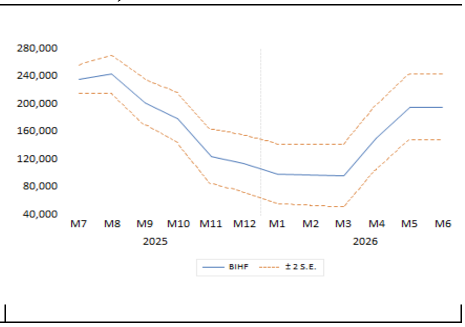
Cross-sections included: 9 Total panel (balanced) observations: 243 Convergence achieved after 6 iterations				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
AR(1)	-0.579597	0.052955	-10.94514	0.0000
SAR(12)	0.887141	0.026811	33.08822	0.0000
R-squared	0.802600	Mean dependent var		-0.001418
Adjusted R-squared	0.801781	S.D. dependent var		0.326575
S.E. of regression	0.145397	Akaike info criterion		-1.010503
Sum squared resid	5.094802	Schwarz criterion		-0.981753
Log likelihood	124.7761	Hannan-Quinn criterion		-0.998923
Durbin-Watson stat	2.606609			

Source: Authors' research

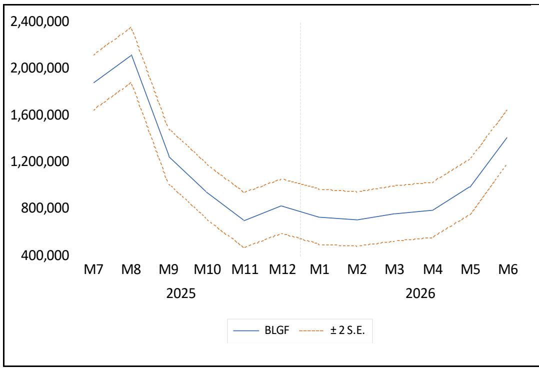
Figure 5: Forecasted data for sampled countries, 2025M7-2026M6



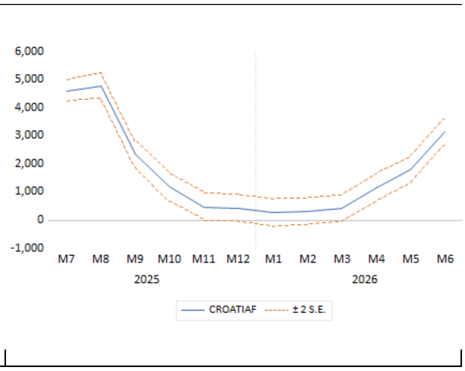
7a) Albania



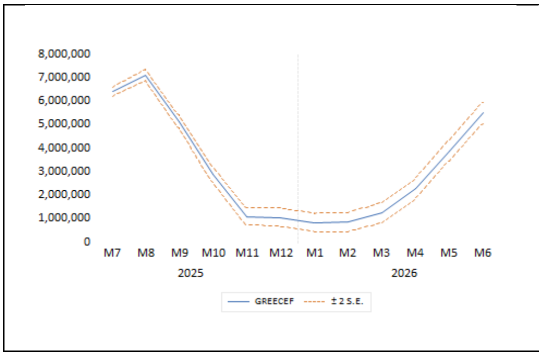
7b) Bosnia and Herzegovina



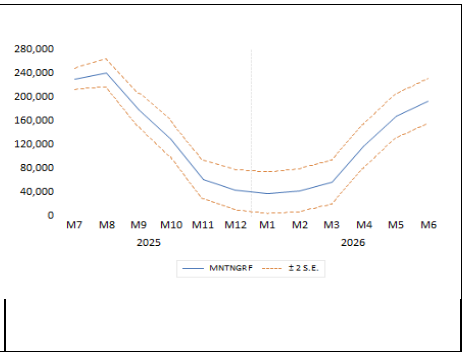
7c) Bulgaria



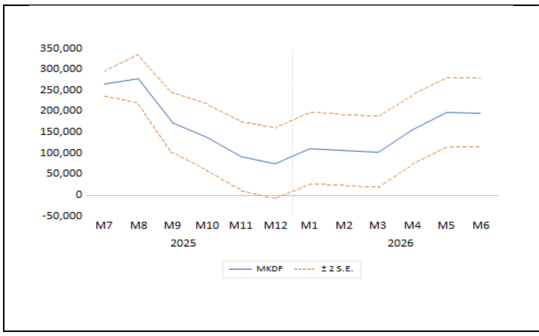
7d) Croatia



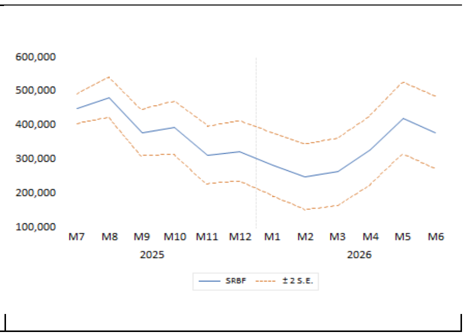
7e) Greece



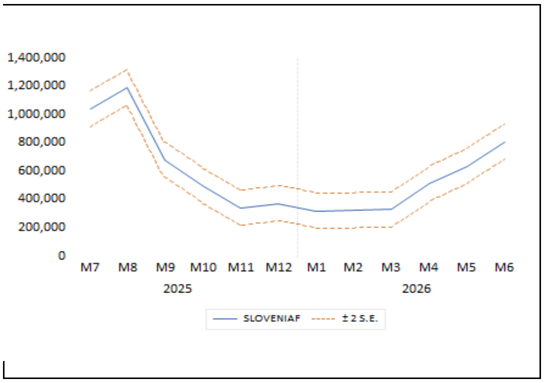
7f) Montenegro



7g) North Macedonia



7h) Serbia



7i) Slovenia

Source: Authors' research

The final step before forecasting was the residual normality test. This analysis ensured that the residual series followed a normal distribution with no prior internal correlation. This confirmed that the residuals represented a series of white noise, validating the model.

Finally, Figure 5 presents the one-year forecast for each country (blue line), along with tourism demand fluctuations within a confidence interval of ±2 standard errors (red lines). This interval provides policymakers with a realistic range for both best-case and worst-case tourism scenarios.

Table 6 summarizes the forecasted tourism demand values. However, these figures require a cautious interpretation, as they are mean values within a ±2 standard error confidence interval. The index values enable cross-country comparisons, ensuring that the high volume of Greece does not overshadow growth in smaller destinations like Albania. These results provide a basic indicator for future tourism development, assuming constant environmental conditions.

Table 6: Forecasted data for sampled countries

Country	2025 M1-M6	2026 M1-M6 Forecast	Index
Albania	14,629,026	17,714,171	1.2109
Bosnia and Herzegovina	1,326,933	1,404,052	1.0581
Bulgaria	9,724,222	10,483,555	1.0781
Croatia	16,284,000	16,362,414	1.0048
Greece	27,899,981	28,829,283	1.0333
Montenegro	1,091,807	1,177,337	1.0783
North Macedonia	956,972	956,000	0.9990
Serbia	2,936,434	3,003,720	1.0229
Slovenia	5,064,489	5,356,605	1.0577

Source: Authors' research

Forecasted values for 2026 (Figure 5 and Table 6) reveal a diversified landscape for tourism development. Albania is projected to achieve the largest increase in tourism demand in terms of tourist arrivals. With an expected growth rate of 21% it is projected to be a leader in the region. This expansion is likely driven by its emerging appeal. While other traditional markets are maturing, Albania offers "personalized" post-pandemic tourism, with sustainable, digitally integrated experiences (Bešić et al., 2024).

Far behind are Montenegro, Bulgaria, and Bosnia and Herzegovina with projected moderate growth between 6% and 8%, representing steady expansion above the regional average. In contrast, Serbia and Greece face more modest increases of 2% to 3% indicating mature markets or post-pandemic stabilization.

With anticipated growth of only 1%, Croatia is entering a 'plateau' phase, common for mature, already famous destinations that cannot grow indefinitely. It approaches 'over-tourism' thresholds or carrying capacity limits where growth shifts from quantity (arrivals) to quality (per-capita spending).

The results for North Macedonia indicate potential structural constraints, as forecasted arrivals remain nearly unchanged compared to 2025 levels. This flat growth (index = 0.9990) indicates 'plateau' effect. While earlier projections predicted steady growth for North Macedonia (Petrevska, 2012; 2017), these new findings reveal a sharp shift to a flatline trajectory. This divergence reflects post-pandemic structural transformations that were not evident in previous decades. This suggests limited growth dynamics, indicating the need for targeted policy adjustments, including the development of new tourism drivers, diversification toward new geographic markets (e.g., Asian tourists), and a shift from mass to high-value tourism.

Overall, these projections indicate that while the region maintains an upward trend, the drivers of growth per country differ significantly, creating stark contrasts in development trajectories. These trajectories range from strong growth patterns in emerging destinations (Albania), to signs of saturation in more mature markets (Greece, Croatia), to relatively stable trends despite continued efforts (North Macedonia). This divergence requires policymakers to adapt to this increasingly fragmented and competitive regional landscape. The observed divergence in growth trajectories supports recent findings that post-pandemic tourism development increasingly depends on adaptability, sustainability, and market positioning (Bešić et al., 2024).

5. Conclusion

This study examines tourism dynamics across the sampled countries in South-East Europe, identifying significant disparities in recovery and growth. Prior to the main analysis, a stylized examination of tourism recovery to pre-2019 levels revealed clear patterns generally tied to geography. Coastal destinations, such as Croatia, Albania, and Greece, recovered fastest (by 2021-2022) due to sea appeal. Conversely, Montenegro, Bosnia and Herzegovina, and Slovenia, despite sea access, reached 2019 levels later, in 2023. Notably, inland Serbia achieved the strongest recovery, fully rebounding by early 2022, while Bulgaria and North Macedonia lagged behind all other sampled countries.

The dual-algorithm approach confirmed regional synchronized patterns alongside fragmented recovery and demand. Clustering analysis grouped countries with statistically similar monthly distributions into three groups: Cluster 0 (Albania, Bulgaria, Croatia, North Macedonia, Slovenia), Cluster 1 (Bosnia and Herzegovina, Greece, Montenegro), and Cluster 2 (Serbia as an outlier). Serbia is a unique case exhibiting highly specific, non-conformist growth curve that matches the recovery speed of coastal destinations (like Greece, Albania) despite lacking sea access.

Furthermore, the analyses confirmed seasonality across all countries. Serbia demonstrated the weakest seasonality, facilitating more stable demand forecasting, while Bulgaria exhibited the most profound seasonal fluctuations.

Finally, this study projected tourism demand through June 2026 using a panel data approach and SARIMA model. Forecasts reveal a highly diversified future, ranging from an increase over 20% for Albania, to the stagnation of North Macedonia at 2025 levels.

From a policy perspective, the findings suggest differentiated strategic approaches across the region. Emerging destinations with strong growth dynamics should prioritize infrastructure expansion and sustainable capacity management to avoid future over-tourism pressures. In contrast, mature destinations should focus on improving quality, diversification, and off-season tourism to mitigate saturation effects. For countries with stable but limited growth, targeted interventions such as market diversification, development of niche tourism products, and digital promotion strategies are essential to stimulate demand and enhance competitiveness.

This research has several limitations. First, the model relies primarily on historical univariate time-series data, which does not account for sudden exogenous shocks such as geopolitical shifts, drastic changes in fuel prices, or similar. Second, data are quantitative and lack the qualitative depth. Lastly, the panel data approach may obscure localized country-specific events that influence short-term demand.

Future research may extend this work with multivariate frameworks (like ARDL or VAR models) incorporating economic indicators as explanatory variables. Also, future work may include high-frequency data (like hotel occupancy rates) or digital footprint data to offer more real-time insights into tourism patterns. Finally, investigating the "plateau" effect in countries like North Macedonia through qualitative policy analysis could provide a better understanding of the structural barriers preventing tourism development.

CRediT author statement

Cvetko Andreeski: Visualization, Software, Validation, Formal analysis, Conceptualization, Supervision. **Biljana Petrevska:** Writing – review & editing, Writing – original draft, Methodology, Investigation, Conceptualization. **Iva Nikoloska:** Writing – review, Data collection, Investigation.

Declaration of generative AI in the writing process

During the preparation of this work, the authors utilized Google Colab with the Python programming language to calculate tourism dynamics. For the writing process, the authors used Gemini to review and edit the grammatical content. The authors have reviewed the final output and take full responsibility for the content of the published article.

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Conflict of interest

The authors declare no conflict of interest.

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The influence of the social network Instagram on tourist destination choice: Behavior of generations Y and Z

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Abstract

Purpose – The objective of this study was to analyze the effect of various determinants included in the UTAUT2 model, with the addition of the construct of perceived trust, on the intention and actual behavior of Instagram users when choosing a tourist destination, with special reference to the behavior of two generational cohorts. **Methodology** – The study was conducted through an online survey on a sample of 531 respondents from Serbia. The questionnaire is constructed on validated scales and modified to the framework of using Instagram when choosing a tourist destination. Data analysis was performed in the programming language R, using the Pslpm package. **Results** – Across the entire sample, habit, hedonic motivation, social influence, and perceived trust impact behavioral intention, while habit, trust, and behavioral intention predict actual behavior. However, the findings showed that generational affiliation moderates the affiliation among enabling circumstances and authentic performance, with the consequence being positive and significant for Generation Z, but not for Generation Y. **Implications** – Theoretically, the discoveries confirm the status of integrating perceived trust into the UTAUT2 model and indicate a reduced role of technical factors in digitally literate populations. Practically, it is recommended to use formats and functionality of Instagram that are closer to younger users.

Keywords: Instagram, tourist destination choice, UTAUT2 model, perceived trust, Generation Y, Generation Z
JEL classification: M31, L83, D91, O33

Uticaj društvene mreže Instagram na odabir turističke destinacije: Ponašanje generacije Y i Z

Sažetak

Svrha – Cilj istraživanja je bio da se ispita uticaj različitih faktora UTAUT2 modela, uz dodatak konstrukta percipiranog poverenja, na nameru i stvarno ponašanje korisnika Instagrama pri izboru turističke destinacije, sa posebnim osvrtom na ponašanje dve generacijske kohorte. **Metodologija** – Istraživanje je sprovedeno putem onlajn ankete na uzorku od 531 ispitanika iz Srbije. Upitnik je zasnovan na validiranim skalama i prilagođen

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kontekstu korišćenja Instagrama pri izboru turističke destinacije. Analiza podataka je sprovedena u programskom jeziku R, korišćenjem paketa pslpm. **Rezultati** – U celokupnom uzorku, navika, hedonistička motivacija, društveni uticaj i percipirano poverenje značajno utiču na nameru ponašanja, dok navika, poverenje i namera ponašanja predviđaju stvarno ponašanje. Međutim, nalazi su pokazali da generacijska pripadnost moderira vezu između olakšavajućih uslova i stvarnog ponašanja, pri čemu je efekat pozitivan i značajan kod Generacije Z, ali ne i kod Generacije Y. **Implikacije** – Teorijski, nalazi potvrđuju važnost integracije percipiranog poverenja u UTAUT2 model i ukazuju na smanjenu ulogu tehničkih faktora u digitalno pismenim populacijama. Praktično, preporučuje se korišćenje formata i funkcionalnosti Instagrama koje su bliže mlađim korisnicima.

Ključne reči: Instagram, izbor turističke destinacije, UTAUT2 model, percipirano poverenje, generacija Y, generacija Z
JEL klasifikacija: M31, L83, D91, O33

1. Introduction

One of the key decisions that potential travelers make is the choice of destination. Since this process is complex, it is influenced by a whole range of factors (Dwityas & Briandana, 2017). In order to make an optimal decision, tourists evaluate tourist destinations in accordance with their own motives and purpose of travel (Gardiner et al., 2013). During this process, the information that enables the elimination of destinations that are not in line with personal preferences and travel goals, while at the same time facilitating the identification of destinations that best suit individual needs, plays a decisive part (Wang & Yan, 2022). During the last decade of the 21st century, social networks have become a central channel for informing, inspiring and shaping the preferences of modern tourists, especially among members of younger generations (Alkier & Perić, 2021; Đuričanin et al., 2021; Dramićanin & Sančanin, 2020; Jevtović, 2019; Stanišić et al., 2024; Wang & Park, 2023). Among them, the Instagram platform stands out as one of the most significant when it comes to creating inspiration and stimulating interest in specific destinations (Tešin et al., 2022).

Despite TikTok's rapid growth in the past few years, Instagram remains one of the leading social media platforms in Serbia, highlighting its continued relevance for studying tourist behavior. DataReportal platform (2025) reports that Instagram is used by 46.9% of the worldwide population, and the platform recorded a growth of additional 100,000 users (+3.3%) between October 2024 and January 2025. In the Serbian context, the Social Serbia 2025 report (Pioniri Communications, 2025) indicates that Instagram continues to attract 85% of active social media users, even as TikTok is increasingly incorporated into frameworks examining tourist behavior, most often concentrating on Gen Z (Băltescu & Untaru, 2025; Dramićanin et al., 2023; Tseng et al., 2024; Zhou et al., 2023). The dominance of Instagram in Serbia points to an overlooked area of inquiry. The discrepancy marks a notable gap in the literature. This gap marks the need for broader examinations of Instagram as a relevant channel shaping tourist motivations and information-seeking behavior, principally between Gen Y and Gen Z cohorts.

Thanks to its visual nature, user-generated content and developed practice of influencer marketing, Instagram significantly influences the perception of destinations, inspires potential travelers and facilitates the process of making travel decisions (Platon, 2023). Although the interest of the academic community, both national and international, in this topic is continuously growing, most of the research so far has focused mainly on examining the intent to custom social networks, while the authentic behavior of users has rarely been the subject of analysis.

As one of the most commonly utilized theoretical frameworks, the UTAUT2 (Unified Theory of Acceptance and Use of Technology 2) model serves to analyze the processes of knowledge acquisition (Venkatesh et al., 2003; 2012). However, in the context of the Instagram social network in tourism, there is a need for its theoretical expansion. Additionally, in this research, the model was expanded by presenting the construct of perceived trust, which has been shown to be relevant for understanding user behavior in the digital environment (Sharma et al., 2023; Zhou et al., 2023), behavioral intention, its direct effect on actual behavior is considered. The focus is on examining how various factors of the UTAUT2 model, with the construct of perceived trust, influence intention, actual behavior, with special reference to possible differences between these generations in terms of their behavior. Previous research indicates that Instagram significantly shapes the perception of destinations through visual content, which can have an impact on the motivation and decisions of tourists (Eman & Radaie, 2025; Hauser et al., 2022; Kim et al., 2010). However, a lack of comprehensive analyses of the precise features that encourage the use of Instagram, especially among the younger generations (Generations Y and Z), has been observed. The research tested a series of hypotheses examining the relationships between determinants: expected performance, expected effort, social influence, facilitating conditions, hedonic motivation, habit, perceived trust, behavioral intention, and actual behavior, with a precise attention on the moderating part of belonging to Generations Y and Z. The outcomes of this study contribute to theory by expanding prevailing models of knowledge acceptance in tourism, by providing empirical understandings in the moderating role of generational affiliation in terms of intention and actual behavior. Departing from Zhou et al. (2023), who tested their model on TikTok within the Chinese context, the present study employs the same theoretical framework, but redirects its application to Instagram users in Serbia by situating the model in a distinct technological and sociocultural environment. The paper contributes to the literature by representing how the model works within the Instagram context and between users from Gen Y and Gen Z in this particular sociocultural background.

2. Literature review and hypothesis development

Generations Y and Z represent the most active part of the population when it comes to using modern digital technologies, and accordingly use Instagram as a primary source of data when making choices about destinations (ELTayleb et al., 2021; Gulati, 2024; Șchiopu et al., 2023). Gen Y and Gen Z are two fundamentally important consumer groups. Gen Z encompasses around 32% of the global population, about 2.47 billion persons, and has become the dominant generational cohort (Harari et al., 2022). Gen Y includes around 1.8 billion individuals, accounting 23% of the global population (Mude & Undale, 2023). These numbers highpoint the demographic and market value of these generations, mostly in studies examining their social media behavior. Understanding how different factors influence the intention of generations Y and Z, as well as their actual behavior when choosing a destination with the use of Instagram, is a significant step in creating effective content in the tourism industry (Nur'afifah & Prihantoro, 2021; Salah et al., 2025). Considering the aforementioned trends, this research was designed based on the following research variables: expected performance, expected effort, social influence, facilitating conditions, hedonic motivation, habit, perceived trust, behavioral intention and actual behavior.

Expected performance plays a significant role in travel decision-making, especially when potential travelers base their choices on the use of technology, such as social networks, travel applications, hotel and travel agency websites (Almunawar et al., 2022; Mishra et al., 2023; Sharma et al., 2023; Vidal-Silva et al., 2024). Expected performance is the gradation of tourist trusts that using a certain technology contribute to achieving better results (Sharma et al., 2023). This concept most often includes saving time and money when choosing a trip, finding more favourable offers and reducing stress (Vidal-Silva et al., 2024). Expected performance is also a measure of the benefits that social networks provide to potential travelers when selecting a destination (Mishra et al., 2023). They are a key factor in research dealing with intentions to book tourist destinations via the Internet (Octaviani et al., 2023). Previous research indicates a confident effect of expected performance on the intention of tourists to use social networks in the process of choosing tourist destinations (Oncioiu & Priescu, 2022; Sharma et al., 2023; Syakier & Hanafiag, 2022; Yuliantie, 2024). Based on the above, the following proposition was formulated:

H1: Expected performance positively influences tourists' behavioral intention to use Instagram when choosing a tourist destination.

Expected effort relates to different socioeconomic status when using technology (Foroughi et al., 2025). In the context of tourist trips, the expected effort, that is, the effort invested, affects the willingness of travelers to adopt technological tools during the planning and implementation of their trip (Ho et al., 2021). Expected effort represents the degree of ease and effort required to use social networks by potential tourists (Mishra et al., 2023). Travelers prefer technology that is understandable, simple and efficient to use (Godoe & Johansen, 2012). Modern travelers use social networks and applications if they believe that these tools are useful and easily accessible (Sharma et al., 2023). Previous research shows that expected effort significantly influences tourists' behavioural intention to use social networks when choosing tourist destinations (Al Rousan et al., 2024; Oncioiu & Priescu, 2022). Based on the above, the following proposition was formulated:

H2: Expected effort has a positive effect on tourists' behavioural intention to use Instagram when choosing a tourist destination.

Modern travelers today are strongly influenced by family and friends when it comes to choosing tourist destinations (Lejealle et al., 2021). Social networking platforms: Instagram, Facebook, Tok Tok, YouTube further amplify this impact, turning travel into a socially driven activity (Boto-García & Baños-Pino, 2022). Social impact denotes the gradation to potential tourist observes that substantial people from his environment, such as family, friends, work colleagues, but also the wider community, expect them to use social media when making decisions (Dai et al., 2022; Pop et al., 2022). Social influence significantly shapes decisions about choosing a tourist destination, especially through social media that provide user-generated content and facilitate the collection and comparison of information about destinations (Dramićanin et al., 2023). Based on that, the following proposition was formulated:

H3: Social influence has a positive effect on tourists' behavioural intention to use Instagram when choosing a tourist destination.

The concept of facilitating conditions reflects the extent to which individuals consider that adequate organizational and technical infrastructure exists to support the adoption of a given technology (Venkatesh et al., 2003). These circumstances include available resources, technical support, and infrastructure that help users use technology in a simple and effective way, facilitating decision-making (Sudarman & Sabaruddin, 2024). Facilitating conditions include access to reliable Internet, availability of customer support, existence of digital tools, as well as infrastructure at the destination itself (Zhang et al., 2019). When it comes to using Instagram, facilitating conditions reduce barriers, increase comfort of use, facilitate the use of digital tools, and provide support to travelers in selecting a travel destination (Atasoy & Türkay, 2024; Kilipiri et al., 2023; Zhou & Xue, 2022). Based on that, the following proposition was formulated:

H4a: Facilitating conditions of using Instagram have a positive effect on tourists' behavioural intention to use this platform when choosing a tourist destination.

Previous research shows that facilitating conditions for using Instagram have a positive effect on tourists' behavioral intention (Ferreira & de Souza, 2025; Tešin et al., 2022). In contemporary literature, there are currently no works that confirm a direct connection between the facilitating settings for using Instagram and the authentic behavior of tourists, and based on that, the following proposition was formulated:

H4b: Facilitating conditions of using Instagram have a positive effect on the actual behaviour of tourists to use this platform when choosing a tourist destination.

Hedonic motivation is defined as a person's internal need to seek enjoyment, satisfaction and emotional stimulation (Williams et al., 2018). Hedonistic tourists make decisions based more on emotions than on rational evaluations, because they focus on the feelings that the destination evokes in them (Sarac et al., 2019). Hedonic motivation plays a key role and affects diverse points of the decision-making method, starting from- choice of destination, all the way to the tourist's behavior (Park & Ahn, 2022; Quintal et al., 2025). Empirical evidence suggests that hedonic motivation plays a significant role in shaping tourists' behavioral intentions during destination selection (Gardiner et al., 2013). Also, certain works confirm that the hedonic motivation for using Instagram encourages tourists to travel. Visual content shown on Instagram causes a sense of satisfaction in potential tourists and positively impacts the development of insolences and intents related to the choice of destination (Halim & Moekahar, 2024; Verma et al., 2023). Based on the above, the following proposition was formulated:

H5: The hedonic motivation of using Instagram has a positive effect on the behavioural intention of tourists to use this platform when choosing a tourist destination.

A habit is a repetitive action performed regularly and routinely, often without conscious thought (Fleetwood, 2021). Habits are mainly formed under the influence of previous experiences, context and various conveniences that an individual has in their everyday environment (Mazar & Wood, 2018). Habits play a central part, especially in travel decision-making, sometimes even more than rational planning (Björk & Jansson, 2008). When it comes to the use of Instagram, research indicates that the routine use of this social network significantly influences tourists' intentions to make a travel decision, given that Instagram provides easy access to inspiring and visually appealing content, which encourages positive attitudes towards certain destinations (Verma et al., 2023). Based on the above, the following proposition was formulated:

H6a: The habit of using Instagram has a positive effect on the behavioural intention of tourists to use this platform when choosing a tourist destination.

Empirical evidence shows that frequent engagement with social networks exerts an influence on the actual behavior of tourists when choosing a destination (Javed et al., 2020). Bearing that in mind, the following proposition was formulated:

H6b: The habit of using Instagram has a positive effect on the actual behaviour of tourists to use this platform when choosing a tourist destination.

Behavioral intention represents an individual's subjective possibility or willingness to behave in a certain way (Netemeyer & Bearden, 1992). Behavioral intention points to the willingness to visit a certain place in the future, book accommodation, acclaim the location, or share personal travel experiences and impressions (Kim et al., 2010). Javed et al. (2020) concluded: the use of social networks, including Instagram, significantly influences the actual behavior of tourists, where it was confirmed that the intent to use Instagram to choose a destination has a direct effect on behavioral decisions. In accordance with the above, the followingproposition was formulated:

H7: The behavioural intention to use Instagram when choosing a tourist destination has a positive effect on the actual behaviour of tourists.

Perceived trust in tourism refers to the degree to which tourists trust the information, recommendations and contents they see on social networks, using them as a basis for making decisions about choosing a tourist destination (Helal et al., 2023; Wang et al., 2014). Liu et al. (2021) showed in their research that perceived trust has a positive effect on tourists' behavioral intention. Similar findings were confirmed a year later by Wang and Yan (2022), highlighting the importance of trust as a predictor of user behavior in a digital tourism environment. Based on these findings, the following proposition was formulated:

H8a: Perceived trust in Instagram content positively influences tourists' behavioural intention to use this network when choosing a tourist destination.

Although most research investigates the influence of perceived trust on behavioural intentions, certain studies indicate a direct effect on actual tourist behaviour. The results of studies show that high perceived trust in content from social networks can contribute to actual behavior, such as choosing a destination and booking a trip (Sutrisno et al., 2024; Wang & Yan, 2022). Based on that, the following proposition was formulated:

H8b: Perceived trust in Instagram content has a positive effect on the actual behaviour of tourists to use this network when choosing a tourist destination.

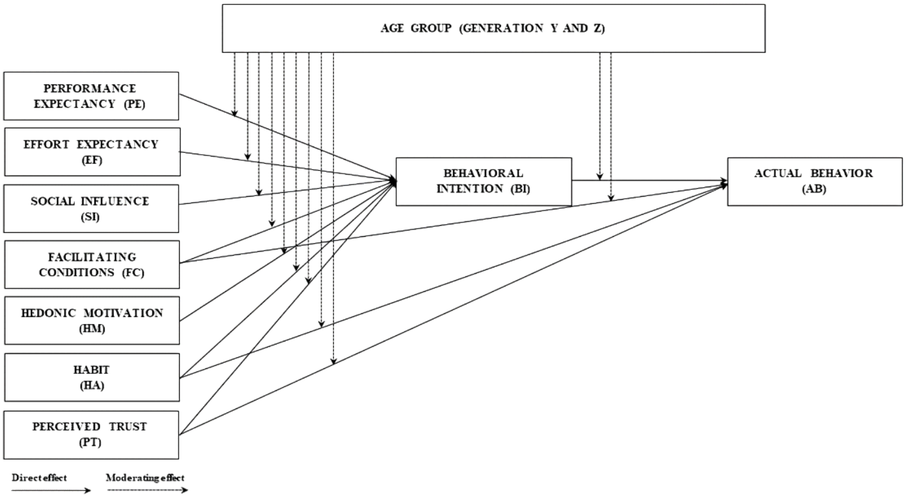
2.1. Generational cohorts as a moderating factors (Y and Z)

National and international literature indicates the importance of representing gen Y and Z in shaping features that impact the use of social links when choosing a tourist destination (Sudarević et al., 2024; Werenowska & Rzepka, 2020). It is also important to emphasize the demographic weight of these generations; Gen Z represents about 32% of the global population (Harari et al., 2022), while Gen Y constitutes about 23% (Mude & Undale, 2023). These generations are the most active users of social networks and the most digitally literate, which affects their behaviour in tourism (Ismail et al., 2025). Expected performance and expected effort are important predictors of tourist intention, but their strength varies by generation, as younger users adopt new technologies more quickly (Linnes & Metcalf, 2017; Venkatesh et al., 2003). Social impact has a stronger consequence on the intent to use Instagram among Generations Y and Z, who are more susceptible to online influences and influencers (Kim et al., 2025; Mahaparta et al., 2025). Facilitating conditions have a greater impact on the actual behaviour of these generations, accustomed to constant access to digital tools (Sia et al., 2022). Hedonic motivation, related to seeking pleasure and entertainment, is also significant in shaping their intentions and behaviour. Belonging to Generations Y and Z moderates the credibility assessment of digital content, increasing or decreasing the link between trust and actual tourist behavior (Tseng et al., 2024). In this way, by examining how generational factors shape the relationships between expected performance, expected effort, social influence, facilitating conditions, hedonic motivation, habits, and perceived trust, and both intention and actual behavior, more targeted strategies for attracting young tourists through Instagram can be developed.

2.2. Conceptual model

The theoretical model illustrates the key variables and their interrelationships that are the subject of this research (Figure 1). The model includes factors, which represent the basic components of the UTAUT2 model. Additionally, the model was extended by presenting the construct of perceived trust, as in the study by Zhou et al. (2023), where, apart from its influence on behavioral intention, its direct effect on the actual behavior of using Instagram when selecting a tourist destination is also considered. Also, the moderating role of generational segment (Y and Z) is included, thus enabling a deeper understanding of variations in behavioural patterns within the target assemblies.

Figure 1: Research model



Source: Authors' research

3. Materials and methods

3.1. Questionnaire design

The survey was designed based on the model of Zhou et al. (2023), with a modification in the segment related to social networking platforms: Tik Tok was replaced by Instagram, and the questions were adapted to better suit the study framework. The questionnaire structure included three main parts: questions about demographic characteristics, the use of Instagram, as well as the key measurement of model variables. The study applied measurement scales adopted and modified from Zhou et al. (2023), with the scales for PE, EF, SI, FC, HM, HA, BI, and AB based on UTAUT2 measures (Venkatesh et al., 2003; 2012), while the PT scale was implemented directly from Zhou et al. (2023). To evaluate the key model variables, the respondents answered using a five-point Likert scale. A preliminary study was directed with 35 survey participants, in order to ensure the precision of the questions in the survey and to examine the measurement scale's reliability.

3.2. Sampling and data collection

The survey was disseminated through Facebook and Instagram, as well as by e-mail, which enabled the collection of data from easily accessible respondents. In addition, survey participants were requested to forward the questionnaire to their acquaintances, to achieve a more direct approach to the target population. This methodological combination indicates the employment of non-probability sampling methods, particularly convenience sampling and snowball sampling (Etikan et al., 2016; Sadler et al., 2010). The information was acquired during June 2025, and 568 survey participants contributed to the study. 37 respondents were excluded from the analysis due to their identification as outliers, i.e., extreme values that significantly deviate from the rest of the sample and that can disproportionately affect the results of statistical models, jeopardizing their reliability and precision (Aguinis et al., 2013). Therefore, 531 valid surveys were utilized in the further investigation. The survey participants' characteristics are shown in Table 1.

Table 1: Demographic characteristics of the respondents

Characteristics	**Frequency (n)**	**Percentage (%)**
Age		
Generation Y	287	50.5
Generation Z	281	49.5
Gender		
Female	358	63.0
Male	210	37.0
Education		
Secondary school	138	24.3
Applied studies	134	23.6
University studies	148	26.1
Master studies	114	20.1
Doctoral studies	34	6.0
Occupation		
Unemployed	50	8.8
Entrepreneur	80	14.1
Student	113	19.9
Employed in public sector	170	29.9
Employed in private sector	155	27.3

Source: Authors' research

The sample is evenly distributed according to age groups, with 287 respondents (50.5%) belonging to generation Y, and 281 respondents (49.5%) to generation Z. Women make up the majority of research participants, a total of 358 (63.0%); 148 respondents (26.1%), have a university degree, while 138 (24.3%) of the survey participants accomplished high school education; the largest number of respondents are employed in the public sector (170), which makes up 29.9% of the sample, while 155 respondents are employed in the private sector, i.e. 27.3.

4. Results and discussion

4.1. Results of descriptive statistical analysis

At the very beginning, we present the characteristics of respondents on the use of Instagram. About a third of respondents (191) use Instagram for more than two hours every day, which is 33.6%. Total of 250 survey participants use Instagram for tourist purposes only occasionally, i.e., 44.0% of respondents. Slightly less than half (265) would probably express a desire to travel to a certain destination because of the attractive content published on this network, which represents 46.7% of respondents. So far, 171 respondents, i.e., 30.1% of the sample, have visited the destination two or three times, inspired by content from Instagram. Other social networks for the purpose of additional verification of information found on Instagram are used by 204 respondents, which is 35.9% of the sample. In addition to

Instagram, Facebook is used by 185 respondents (32.6%), while the same number (185), i.e., 32.6%, use Tik Tok when making a decision about choosing a tourist destination.

4.2. Testing the measured model

To ensure the consistency of the data, the model's reliability and validity were evaluated; the corresponding test results are shown in the table below.

Table 2: Reliability and validity tests

Construct/ Indicator	**Loading**	**Cronbach's alpha**	**Composite reliability (CR)**	**Average variance extracted (AVE)**
Performance expectancy (PE)		**0.777**	**0.857**	**0.599**
PE1	0.796			
PE2	0.788			
PE3	0.747			
PE4	0.765			
Effort expectancy (EF)		**0.673**	**0.820**	**0.603**
EF1	0.778			
EF2	0.756			
EF3	0.795			
Social influence (SI)		**0.644**	**0.808**	**0.584**
SI1	0.780			
SI2	0.731			
SI3	0.780			
Facilitating conditions (FC)		**0.656**	**0.814**	**0.593**
FC1	0.790			
FC2	0.796			
FC3	0.722			
Hedonic motivation (HM)		**0.701**	**0.833**	**0.625**
HM1	0.802			
HM2	0.797			
HM3	0.772			
Habit (HA)		**0.678**	**0.823**	**0.608**
HA1	0.759			
HA2	0.810			
HA3	0.769			
Perceived trust (PT)		**0.691**	**0.829**	**0.618**
PT1	0.790			
PT2	0.761			
PT3	0.806			
Behavioral intention (BI)		**0.722**	**0.843**	**0.643**
BI1	0.768			
BI2	0.833			
BI3	0.803			
Actual behavior (AB)		**0.756**	**0.860**	**0.672**
AB1	0.820			
AB2	0.825			
AB3	0.815			

Source: Authors' research

The constructs of expected performance, hedonic motivation, behavioral intention and actual behavior showed high reliability (Cronbach α > 0.7). The other variables: effort expectancy, facilitating conditions, habit, and perceived trust, confirmed reliability close to the suggested value (α > 0.6), observing that Cronbach's α is sensitive to a small number of indicators, and all these constructs in the study were evaluated with three indicators (Tavakol & Dennick, 2011). In the PLS approach, composite reliability is considered the primary and more robust measure of internal consistency, since it relies on factor loadings and accounts for measurement errors, making it less affected by the number of indicators (Hair et al., 2021). Recommended values are ≥ 0.70, while values ≥ 0.80 are considered a very good indicator of reliability. In this case, the CR for all concepts is larger than 0.80, which confirms the high internal consistency of the measurement. AVE assesses the extent to which a latent construct explains the variance of its indicators relative to the variance due to measurement error. Values ≥ 0.50 confirm convergent validity (Hair et al., 2021). In this research, the AVE ranges - 0.584 to 0.643- above the suggested verge and confirms the satisfactory convergent validity of all concepts.

HTMT (Heterotrait-Monotrait ratio) represents a modern approach for evaluating discriminant validity in structural modeling (Hair et al., 2021). Calculated HTMT values (Table 3) exceed the verge of 0.85, which indicates the existence of satisfactory discriminant validity of the concepts. The results show VIF values ranging from 2.304 to 3.393, indicating that multicollinearity is not a concern and that the constructs maintain reasonable independence (Hair et al., 2021; O'Brien, 2007).

Table 3: Discriminant validity and Variance Inflation Factor

Constr.	**PE**	**EF**	**SI**	**FC**	**HM**	**HA**	**PT**	**BI**	**AB**	**VIF**
PE										3.393
EF	0.436									2.798
SI	0.415	0.354								2.806
FC	0.411	0.415	0.295							2.304
HM	0.444	0.425	0.399	0.389						2.827
HA	0.416	0.396	0.423	0.352	0.408					3.567
PT	0.383	0.366	0.403	0.312	0.397	0.425				2.811
BI	0.411	0.375	0.426	0.324	0.423	0.477	0.457			3.574
AB	0.411	0.385	0.43	0.328	0.414	0.497	0.479	0.517		3.698

Source: Authors' research

4.3. Hypotheses testing results

To assess the impact of Instagram on tourist destination choices for Generations Y and Z, PLS path analysis was applied, conducted in R (version 4.4.0) using the Pslpm package (version 0.5.1).

The structural model illustrates a high level of variance explanation for behavioral intention ($R^2 = 0.689$) and actual behavior ($R^2 = 0.726$). The Q^2 values (0.326 for behavioral intention and 0.429 for actual behavior) indicate satisfactory analytical importance of the model. According to the literature, R^2 values of 0.75, 0.50 and 0.25 are measured high (considerable), medium (moderate) and weak (low) level of variance explanation, while Q^2 values greater than 0 confirm good predictive relevance of the model (Hair et al., 2021). Below are the outcomes of the hypothesis testing.

Table 4: Path test results

Hypotheses/ Path	**R^2**	**Q^2**	**Direct effect**	***t*-value**	***p*-value**	**Supported or not**
Behavioral intention	**0.689**	**0.326**				
H1: PE → BI			0.078	1.800	0.073	No
H2: EF → BI			0.001	0.023	0.982	No
H3: SI → BI			0.130	3.340	<0.001	Yes
H4a: FC → BI			-0.025	-0.700	0.484	No
H5: HM → BI			0.139	3.540	<0.001	Yes
H6a: HA → BI			0.354	8.900	<0.001	Yes
H8a: PT → BI			0.269	7.430	<0.001	Yes
Actual behavior	**0.726**	**0.429**				
H4b: FC → AB			0.011	0.410	0.682	No
H6b: HA → AB			0.331	8.820	<0.001	Yes
H8b: PT → AB			0.264	7.710	<0.001	Yes
H7: BI → AB			0.337	8.890	<0.001	Yes

Source: Authors' research

Regarding behavioral intention, the variables SI ($\beta = 0.130$, $t = 3.340$, $p = 0.001$), HM ($\beta = 0.139$, $t = 3.540$, $p < 0.001$), HA ($\beta = 0.354$, $t = 8.900$, $p < 0.001$) and PT ($\beta = 0.269$, $t = 7.430$, $p < 0.001$), which confirms hypotheses H3, H5, H6a and H8a. In contrast, the effects of PE ($\beta = 0.078$, $t = 1.800$, $p = 0.073$), EF ($\beta = 0.001$, $t = 0.023$, $p = 0.982$) and FC ($\beta = –0.025$, $t = –0.700$, $p = 0.484$) on behavioral intention are not statistically significant, and hypotheses H1, H2 and H4a are rejected. Regarding actual behavior, HA ($\beta = 0.331$, $t = 8.820$, $p < 0.001$), PT ($\beta = 0.264$, $t = 7.710$, $p < 0.001$) and BI ($\beta = 0.337$, $t = 8.890$, $p < 0.001$) have significant positive direct effects, confirming hypotheses H6b, H8b and H7. The effect of FC on actual behavior ($\beta = 0.011$, $t = 0.410$, $p = 0.682$) is not significant, and hypothesis H4b is not confirmed.

In conclusion, the obtained results indicate the importance of HA, PT and BI constructs in predicting actual behavior, as well as the importance of HA, PT, SI and HM in shaping behavioral intention, while other effects were not statistically significant.

4.4. Results of multi-cluster analysis

The results of the multi-cluster analysis (Table 5), conducted to examine the moderating role of age, showed that age groups (Generation Y and Generation Z) perceive relationships within the conceptual model similarly to a certain extent.

Among Generation Y, significant positive effects on behavioral intention (BI) were found for social influence (SI → BI) ($\beta = 0.172$; $p = 0.002$), habit (HA → BI) ($\beta = 0.353$; $p < 0.001$) and perceived trust (PT → BI) ($\beta = 0.260$; $p < 0.001$). Actual behavior (AB) in this group is significantly influenced by habit (HA → AB) ($\beta = 0.403$; $p < 0.001$), perceived trust (PT → AB) ($\beta = 0.291$; $p < 0.001$) and behavioral intention (BI → AB) ($\beta = 0.297$; $p < 0.001$).

Among Generation Z, significant predictors of behavioral intention (BI) are hedonic motivation (HM → BI) ($\beta = 0.204$; $p < 0.001$), habit (HA → BI) ($\beta = 0.342$; $p < 0.001$) and perceived trust (PT → BI) ($\beta = 0.294$; $p < 0.001$). Actual behavior (AB) is significantly influenced by habit (HA → AB) ($\beta = 0.260$; $p < 0.001$), perceived trust (PT → AB) ($\beta = 0.237$; $p < 0.001$) and behavioral intention (BI → AB) ($\beta = 0.381$; $p < 0.001$).

Table 5: Multi-cluster structural equation model estimation results

Path	**Path coef.** (Y)	**Path coef.** (Z)	**Diff.** (Y and Z)	***t*-value** (Y)	***t*-value** (Z)	***t*-value** (Diff. Y and Z)	***p*-value** (Y)	***p*-value** (Z)	***p*-value** (Diff. Y and Z)
PE → BI	0.088	0.060	0.028	1.410	0.981	0.343	0.160	0.328	0.366
EF → BI	-0.029	0.037	0.066	-0.475	0.724	0.827	0.635	0.470	0.204
SI → BI	0.172	0.086	0.86	3.190	1.500	0.852	0.002	0.134	0.197
FC → BI	0.031	-0.063	0.095	0.617	-1.240	1.014	0.538	0.216	0.156
HM → BI	0.069	0.204	0.136	1.150	3.900	1.515	0.250	<0.001	0.065
HA → BI	0.353	0.342	0.011	6.020	6.120	0.547	<0.001	<0.001	0.292
PT → BI	0.260	0.294	0.033	4.850	5.940	0.498	<0.001	<0.001	0.309
FC → AB	-0.050	0.068	0.118	-1.330	1.680	2.076	0.185	0.094	0.019
HA → AB	0.403	0.260	0.144	8.040	4.620	1.333	<0.001	<0.001	0.092
PT → AB	0.291	0.237	0.054	6.330	4.660	0.839	<0.001	<0.001	0.201
BI → AB	0.297	0.381	0.085	5.890	6.720	0.866	<0.001	<0.001	0.193

Source: Authors' research

The differences test between groups showed statistically significant differences only in the path facilitating conditions to actual behavior (FC → AB) ($t = 2.076$; $p = 0.019$), where the effect was positive in Generation Z, while it was not significant in Generation Y. For all other trajectories, the differences between generations were not statistically important ($p > 0.05$) - most relationships within the model function similarly in both age groups, i.e., the results indicate that the mechanisms that shape intention and actual behavior are largely consistent between both generational cohorts.

4.5. Discussion

The results of the study indicate that habit (HA), hedonic motivation (HM), and social influence (SI) are significant predictors of behavioral intention (BI) for using Instagram in the tourist destination choice context. These results are consistent with the theoretical foundations and prior research on technology acceptance in tourism (Bakshi et al., 2019). In the present study, the paths from performance expectancy (PE) and effort expectancy (EE) to behavioral intention (BI) were not significant, whereas Zhou et al. (2023) reported both paths as significant. Perceived trust (PT) emerged as a key driver of behavioral intention in this study, consistent with the findings of Zhou et al. (2023) justifying its inclusion in the model. Trust in the source and content on social media reduces perceived risk and facilitates travel decision-making (Filieri et al., 2015).

Concerning actual behavior (AB), these findings are consistent with Zhou et al. (2023), who also identified HA and BI as the strongest predictors of actual behavior. This study reveals a direct influence of perceived trust (PT) on actual behavior (AB), a path not included in the Zhou et al. (2023), constituting a significant theoretical contribution and offering deeper insight into the translation from intention to actual behavior (Lui & Zainuldin, 2025). Facilitating conditions (FC) did not show a significant impact on either behavioral intention or actual behavior, consistent with the findings of Zhou et al. (2023). This result can be partly attributed to the relatively uniform profile of participants. Most of them belong to generations with strong digital literacy and reliable access to the technological tools needed to use Instagram. In such populations, technical and functional factors show very little variability, reducing their predictive potential.

The analysis of the moderating effect of age groups (Gen Y and Gen Z) shows that most structural relationships remain stable across both generations, albeit with clear differences in the strength of certain effects. In both segments, habit (HA) and perceived trust (PT) represent key determinants of behavioral intention (BI), indicating the broad stability of these constructs in a digital environment. However, hedonic motivation (HM) was statistically significant only for Gen Z, while it was not confirmed for Gen Y. This suggests that younger Instagram users place greater importance on the platform's entertaining and emotional features, whereas older users base their intention primarily on more stable factors such as habit and trust. Social influence (SI) had a significant effect on BI only for Gen Y, which contrasts with Zhou et al. (2023), where SI had a stronger impact on younger users. In our study, older users appear more sensitive to the expectations of their social environment and reference groups, while Gen Z forms intentions primarily based on personal experience, habit, and trust in content.

The results related to actual behavior (AB) indicate that habit (HA), perceived trust (PT), and behavioral intention (BI) are significant predictors in both generations, partially aligning with the findings of Zhou et al. (2023). However, in our study, their effects are not evenly distributed. For Gen Y, HA has a stronger impact on AB, suggesting that older users are more likely to rely on established behavior. In contrast, behavioral intention (BI) has the strongest impact on actual behavior (AB) among Gen Z, suggesting that younger users convert their intentions into actions more directly. Facilitating conditions (FC) were statistically significant only for Gen Z, whereas no significant effect was observed for Gen Y. This differs with Zhou et al. (2023), where facilitating conditions (FC) did not have significant impact on either generation. The results indicate that younger users attach greater importance to the availability of technical resources and supportive conditions when translating intention to actual behavior, while older users do not consider these factors as crucial.

Instagram use in Serbia is primarily oriented towards seeking inspiration, visual representations of destinations, and content from local creators, consistent with research highlighting the platform's role in visual motivation and the early stages of travel planning (Tešin et al., 2022). Global usage patterns indicate an increasing professionalization of influencers and a stronger commercial integration of the platform into tourism marketing (Rodríguez-Hidalgo et al., 2023), whereas in Serbia a more personalized and less commercialized approach remains prevalent, based on authentic recommendations and informal communication (Pioniri Communications, 2025). This difference may also be related to the motives for using Instagram, as users in markets such as Serbia perceive the platform primarily as a social and entertaining channel, which further explains the prominent role of Perceived Trust, Social Influence, and Habit identified in our mode.

Although the strength of some effects varies between cohorts, these findings underscore Instagram's overall influence on the tourist destination selection process, while also revealing generation-specific motivational patterns among younger and older cohorts.

5. Conclusion

This research intended to examine the impact of various features of the UTAUT2 model, with the addition of perceived trust, on the intention and actual behavior of Instagram users when choosing a tourist destination, with special reference to the behavior of Gene Y and Gen Z. The outcomes displayed that social impact, hedonic motivation, habit and perceived trust are key determinants of behavioral intention, while habit, trust and behavioral intention significantly influence actual behavior. Moderating consequence analysis of age indicated that generational affiliation in the outcome of facilitating conditions on authentic behavior significantly moderates this relationship, where the influence is significant in Generation Z, but not in Generation Y. The obtained R^2 values approve the good analytical power of the model.

5.1. Theoretical implications

This study makes several theoretical contributions to the field of digital tourist behavior by extending and contextualizing the UTAUT2 model (Venkatesh et al., 2012; 2003). The importance of perceived trust as a key factor in the decision-making process is confirmed, with trust exerting a direct effect not only on behavioral intention but also on actual behavior. This finding extends the results of Zhou et al. (2023), who examined the impact of trust only on intention, and highlights trust as one of the central mechanisms in social media-based tourism decision-making.

The study provides empirical support for the extended UTAUT2 model in the Serbian cultural context, building on previous research that has tested the model in various geographical settings (Agag & El-Masry, 2016; Foroughi et al., 2025; Octaviani et al., 2023; Sharma et al., 2023;). The findings indicate a high predictive value of the model within Serbia's digital environment, thereby confirming its broader international applicability.

Unlike many previous studies (Agag & El-Masry, 2016; Foroughi et al., 2025; Octaviani et al., 2023; Sharma et al., 2023), that consider age as a general demographic factor, this research distinguishes explicitly between Gen Y and Gen Z. Such a distinction allows for a more nuanced understanding of generational differences in digital technology adoption in tourism, particularly in the Serbian context where systematic generational segmentation has been limited. The analysis reveals that certain UTAUT" constructs function differently across these cohorts: hedonic motivation was significant only for Gen Z, whereas social influence showed a meaningful impact exclusively for Gen Y.

Facilitating conditions (FC) significantly influences actual behavior only for Gen Z, an effect not observed in (Zhou et al., 2023) study. These findings suggest that younger users prioritize ease of technology use, and the availability of resources when translating intentions into actions. The study enhances the UTAUT2 framework by incorporating perceived trust as a predictor of actual behavior, validating the model in a new cultural setting, and identifying generation-specific patterns that extend beyond earlier research

5.2. Practical implications

The central importance of Perceived Trust is confirmed, influencing not only users' Behavioral Intention but also their Actual Behavior. This consequence builds on the work of Zhou et al. (2023) by showing that Instagram content that is authentic, transparent, and credible can directly drive actual travel decisions, rather than simply generating interest or intention. Destination management organizations should prioritize creating content that conveys trustworthiness, is based on genuine experiences, and clearly signals authenticity.

A clear generational pattern was also observed, enabling more precise market segmentation. For Generation Y, Social Influence and established Habits are key, suggesting that communication strategies should rely on social proof, recommendations from relevant groups, and consistent information flows. Gen Z seems to make travel decisions based on hedonic motivation, trust in content, and access to technical resources. Content shaped for younger tourists should be visually attractive, collaborative, and enjoyable. At the same time, it should ensure speedy access to information, smooth navigation, approachable design, and support via preferred channels such as short form videos, chatbots, and customized recommendations.

Habit plays a key role in driving actual behavior across both cohorts, emphasizing the necessity to foster consistent engagement with Instagram as a source of inspiration and information. Strategies such as reliable communication, divided content, and loyalty programs can create stable digital behavior patterns, which over time may enhance interest in specific destination.

Such approaches can increase the likelihood of Instagram users not only forming intentions, but also translating them into concrete travel decisions, ultimately selecting particular tourist destinations.

5.3. Research limitations

The use of non-probability sampling techniques limits the representativeness of the findings; therefore, they cannot be considered fully representative of the entire population. Furthermore, the research was conducted in Serbia, which implies cultural limitations and suggests the need for caution when applying the results in a wider international context.

The subject of the research was exclusively the Instagram platform, while users also use other networks (Tik Tok, Facebook, YouTube) in the decision-making procedure. Additionally, data were collected through self-report by respondents, which may lead to subjective biases, such as socially desirable responses.

It is recommended to increase the sample by incorporating older generations, which would enable a more detailed overview of intergenerational differences. Furthermore, future research should include more social networks and a comparative analyses of their effects on the choice of tourist destinations, bearing in mind that users rarely use only one platform in practice.

CRediT author statement

Mihajlo Đurović: Conceptualization, Data curation, Writing – original draft, Project administration, Resources, Writing – review & editing, Validation. **Tanja Vujović:** Conceptualization, Methodology, Writing – review & editing, Supervision, Validation. **Goran Perić:** Conceptualization, Methodology, Formal analysis, Investigation, Data curation, Writing – original draft, Writing – review & editing, Validation, Project administration. **Cesim Behremen:** Writing – review & editing, Resources, Validation, Visualization.

Declaration of generative AI in the writing process

During the preparation of this work the authors did not use generative AI and AI-assisted technologies in the writing process.

Conflict of interest

The authors declare no conflict of interest.

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Digital transformation in rural wine tourism: Lessons from Goriška Brda, Slovenia, for developing smart rural destinations in Serbia

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Abstract

Purpose – This study investigates the impact of digital innovation and sustainable practices on tourist behavior and destination attractiveness in rural wine regions, using Goriška Brda (Slovenia) as a case study. The goal is to identify key factors that influence visitation to smart rural wine destinations and explore how these practices can be adapted to enhance wine tourism in Serbia. **Methodology –** The research employed a quantitative approach, surveying 383 tourists in Brda municipality. Data were collected via a structured questionnaire using a five-point Likert scale. Factor analysis revealed three key constructs – VineTech Tourism, Smart Sustainability, and Digital Oenotravel – which were validated through Structural Equation Modeling (SEM) to test interrelationships and the theoretical model. A post-positivist epistemological approach guided the research design. **Findings –** The results confirmed that tourists value a blend of digital connectivity, sustainability, and immersive experiences. All three constructs significantly influenced tourist attitudes, supporting the hypothesis that smart rural tourism drives destination appeal and competitiveness. The 25–44 age group, particularly those with higher education, showed the strongest alignment with smart tourism values. **Implications –** Goriška Brda's model offers a transferable blueprint for Serbian wine destinations, emphasizing community-based, tech-enabled, and sustainability-driven development to enhance rural tourism competitiveness and visitor engagement.

Keywords: smart rural tourism, wine tourism, digital innovation, sustainable development, Goriška Brda (Slovenia)
JEL classification: O33, R11

Digitalna transformacija u ruralnom vinskom turizmu: Lekcije iz Goriška Brda, Slovenija, za razvoj pametnih ruralnih destinacija u Srbiji

Sažetak

Svrha – Ova studija istražuje uticaj digitalnih inovacija i održivih praksi na ponašanje turista i atraktivnost destinacija u ruralnim vinskim regionima, koristeći Goriška Brda (Slovenija) kao studiju slučaja. Cilj je da se identifikuju ključni faktori koji utiču na posetu pametnim ruralnim vinskim destinacijama i da se istraži kako se ove prakse mogu prilagoditi za

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unapređenje vinskog turizma u Srbiji. **Metodologija** – Istraživanje je sprovedeno kvantitativnim pristupom, anketiranjem 383 turista u mestu Goriška Brda (Slovenija). Podaci su prikupljeni putem strukturisanog upitnika korišćenjem petostepene Likertove skale. Faktorska analiza je otkrila tri ključna faktora – VineTech turizam, Pametna održivost i Digitalni enoturizam – koji su validirani korišćenjem modelovanja strukturnih jednačina (SEM) radi testiranja međusobnih odnosa i teorijskog modela. Istraživanje je vođeno postpozitivističkim epistemološkim pristupom. **Rezultati** – Rezultati su potvrdili da turisti vrednuju kombinaciju digitalne povezanosti, održivosti i imerzivnih iskustava. Sva tri konstrukta su značajno uticala na stavove turista, podržavajući hipotezu da pametni ruralni turizam povećava atraktivnost i konkurentnost destinacije. Starosna grupa od 25 do 44 godine, posebno visokoobrazovani turisti, pokazali su najjače slaganje sa vrednostima pametnog turizma. **Implikacije** – Model Goriška Brda nudi prenosiv plan za vinske destinacije u Srbiji, naglašavajući razvoj zasnovan na zajednici, tehnologiji i održivosti radi unapređenja konkurentnosti ruralnog turizma i angažovanja posetilaca.

Ključne reči: pametni ruralni turizam, vinski turizam, inovacije, održivi razvoj, Goriška Brda (Sloveija)
JEL klasifikacija: O33, R11

1. Introduction

The advent of smart tourism has revolutionized the way travelers engage with rural destinations, leveraging technology to enhance the overall experience (Matyusupov et al., 2024). One significant innovation is the intelligent tour guide system developed by Zhang et al. (2018), which employs Internet of Things (IoT) and deep learning (DL) technologies to offer real-time information and personalized recommendations to tourists as they explore rural areas (Zhuang et al., 2022). This system exemplifies how the integration of advanced technologies can create richer travel experiences, particularly when combined with virtual reality (VR) and augmented reality (AR), as explored in Yang’s (2023) research. According to Liu and Yu (2022), the use of IoT devices enables the monitoring of environmental parameters such as air quality and temperature, ensuring that both visitors and local ecosystems are protected while optimizing resource utilization (Bešić et al., 2024; Oyedeji et al., 2024). The combination of these technologies not only enhances visitor satisfaction but also contributes to the sustainable development of rural tourism by preserving local cultures and heritage sites for future generations (Esper et al., 2025). As smart tourism continues to evolve, it promotes interconnected journeys that balance economic viability with ecological preservation, thereby redefining how we experience travel in rural contexts (Flores-Crespo et al., 2022). According to Hsu (2025), embracing these technological advancements unlocks the true potential of rural tourism, offering not only enriched experiences for tourists but also fostering sustainable practices that benefit local communities and environments.

Smart rural tourism combines advanced technology and innovative practices to enhance visitor experiences while addressing the challenges faced by rural areas (Arsić et al., 2025; Ye et al., 2025). It utilizes digital tools like mobile apps and data analytics to create interactive and immersive experiences, such as GPS-guided tours and augmented reality applications (Tsepapadakis & Gavalas. 2023). Unlike traditional tourism, which often lacks real-time engagement, smart rural tourism focuses on community feedback and sustainability, promoting eco-friendly practices and local involvement (Ye et al., 2025). This approach not only boosts local economies by attracting diverse tourists but also preserves cultural heritage through authentic experiences and workshops (Sustacha et al., 2024). Observing smart rural tourism as the tourism of the future, the authors were looking for the best example from the environment that could serve as a model for the development of rural tourism in Serbia and its transformation towards a sustainable, smart form (Cimbaljević et al., 2023; Ignjatović et al., 2023; Jovanović et al., 2025; Lazić et al., 2023). Slovenia stood out as the most logical destination considering the common history, and then also the importance of rural smart tourism in this country.

The transformation of Goriška Brda into a leading smart wine destination emerged as part of Slovenia's broader strategy to enhance rural tourism by leveraging its rich viticultural heritage and natural assets (Glavan et al., 2020). This development has been incremental, driven by a combination of infrastructural investments, community involvement, sustainability initiatives, and digital innovation. Goriška Brda has historically been recognized for its viticulture, particularly its premium white wines such as Rebula and Sauvignon Blanc. The region's longstanding winemaking tradition provided a solid foundation for constructing an authentic wine tourism offering. The initial phase of development involved recognizing the potential of this heritage to attract wine and agro-tourists seeking immersive rural experiences. To support increased tourist inflows, significant improvements in local infrastructure were implemented. These included the development of high-quality accommodations (e.g., boutique hotels, eco-lodges) and diversified transport solutions to enhance accessibility and mobility within the region. A notable initiative was the creation of the Goriška Brda Wine Road, which strategically connects key wineries and enables streamlined exploration of the region (Skubin et al., 2020).

A defining feature of Goriška Brda's tourism strategy was the bottom-up approach involving local winemakers, cultural institutions, and community stakeholders (Glavan et al., 2020). This collaborative model facilitated the development of integrated tourism products, combining wine tasting with culinary experiences, cultural heritage tours, and traditional festivals. Such initiatives ensured economic benefits remained within the community while preserving Goriška Brda's cultural authenticity. Sustainability was embedded into Goriška Brda's tourism development framework from the outset. Emphasis was placed on promoting organic agriculture and biodynamic viticulture to protect the region's environmental integrity (Pintar et al., 2010). Green energy practices – including the installation of solar panels and energy-efficient accommodations – were implemented alongside eco-conscious infrastructure such as waste management systems. Moreover, the adoption of slow tourism principles encouraged deeper, more sustainable visitor engagement with the region. The digital transformation of Goriška Brda was a pivotal milestone in its evolution into a smart destination. Wineries began integrating digital platforms for online booking, virtual tours, and digital wine catalogs. Augmented and virtual reality technologies were subsequently introduced to enhance educational and experiential dimensions of wine tourism. Additionally, data-driven tools were adopted to monitor visitor behavior and personalize services, thereby improving overall tourist satisfaction and engagement.

In line with its sustainability goals, Goriška Brda introduced smart mobility solutions, including electric bicycle and e-scooter rentals to reduce carbon emissions and facilitate movement across the hilly landscape. The gradual integration of Mobility as a Service (MaaS) platforms enabled tourists to plan multi-modal travel and organize guided experiences efficiently, further optimizing the regional tourism infrastructure. As a result of these coordinated efforts, Goriška Brda gained recognition as an exemplary model of smart rural tourism. Local actors received awards at national and international levels for their innovative and sustainable approaches to wine tourism. The Slovenian Tourist Board subsequently endorsed Goriška Brda as a flagship destination, providing further financial and institutional support. Goriška Brda's success has served as inspiration for other rural regions across Europe, fostering cross-regional learning and innovation transfer. The smart development of Goriška Brda is ongoing. Current initiatives include the exploration of blockchain technologies for wine traceability, advanced data analytics for deeper personalization of visitor experiences, and research into autonomous, eco-friendly transport solutions. Importantly, local stakeholders remain actively involved in shaping Goriška Brda's future, ensuring that development aligns with environmental protection and cultural preservation objectives (Piras, 2024).

The example of Goriška Brda demonstrates that the integration of digital innovation, sustainability, and community engagement can successfully transform rural destinations into competitive and resilient tourism models. Building on this experience, the present study explores how similar principles can be applied to enhance the development of rural wine destinations in Serbia. Accordingly, this research is guided by the central hypothesis that the development of smart rural tourism is a key driver of future growth and competitiveness in wine rural destinations, particularly within the context of Serbia. To address this hypothesis, the study focuses on two key research questions: (1) what factors have made Goriška Brda a sought-after destination for wine tourists, and (2) how other rural destinations can replicate this model by leveraging sustainability, digital technologies, and community engagement to create a distinctive smart tourism experience. By drawing lessons from Goriška Brda, this study aspires to demonstrate that rural regions – when empowered by technology, sustainability, and local participation – can thrive as dynamic and resilient tourism destinations.

2. Literature review

2.1. Rural tourism

Rural tourism emphasizes authentic experiences that connect visitors with local traditions, natural landscapes, and community life (Panić et al., 2024). It serves as an important driver of rural development by creating employment opportunities, revitalizing local economies, and preserving cultural identity (Benaddi et al., 2024; Gelter et al., 2022). However, rural destinations face persistent challenges, including limited infrastructure, demographic decline, and seasonality. According to Lee and Jan (2023), the success of rural tourism depends on strong community involvement, where residents actively participate in shaping tourism initiatives that reflect their values and aspirations. Similarly, Wang (2024) emphasizes that local participation fosters ownership, pride, and authenticity-key factors in maintaining sustainable rural development. Building on previous studies, such as Lu et al. (2021), who underline the importance of participatory planning, this research assumes that sustainability and community engagement are fundamental to competitiveness in rural destinations. These principles provide the basis for exploring how smart technologies can strengthen traditional rural tourism models.

Hypothesis 1 (H1): Tourists who prioritize sustainable values and digital innovation in wine tourism are more likely to support and revisit rural destinations that adopt smart development practices.

2.2. Wine tourism

Wine tourism is a rapidly evolving niche within rural tourism that combines agriculture, culture, and gastronomy (Turčinović et al., 2025). It contributes to regional development by fostering local entrepreneurship, generating income, and preserving traditional craftsmanship (Jezierska-Thöle et al., 2025). According to Long and Chen (2024), wine tourism stimulates rural economies by encouraging direct interaction between producers and visitors, while Mantero (2023) highlights its potential to attract a diverse, experience-seeking clientele. Beyond economic gains, Nieves-Pavón et al. (2024) and Shin et al. (2023) emphasize that wine tourism fosters cultural preservation through educational workshops, traditional festivals, and culinary experiences featuring local products. Sustainability plays a crucial role in this sector. Studies by Sustacha et al. (2023) and Tavitiyaman (2021) demonstrate that environmentally conscious wine tourism practices – such as organic production, waste reduction, and responsible visitor management – help protect natural resources and ensure the long-term viability of rural destinations.

Hypothesis 2 (H2): The integration of smart, interactive, and educational features focused on sustainability enhances the attractiveness and perceived value of wine rural destinations.

2.3. Smart tourism

Smart tourism represents the digital transformation of the tourism sector, integrating advanced technologies such as the Internet of Things (IoT), artificial intelligence (AI), data analytics, and mobile applications to improve efficiency, sustainability, and personalization (Knežević et al., 2025; Suanpang & Pothipassa, 2024; Vaz et al., 2025). According to Collado-Agudo et al. (2023), technologies such as GPS-guided tours and augmented reality (AR) applications enable immersive, location-based experiences, while Gong and Schroeder (2022) emphasize the role of real-time data in adapting services to tourist needs. Sustainability remains a cornerstone of smart tourism, as noted by Kontogianni et al. (2022) and Koo et al. (2025), ensuring that innovation supports both environmental protection and social inclusion. Smart tourism also reshapes visitor behaviour (Vujko et al., 2025). Mavric-Scholze et al. (2025), suggesting that tourists increasingly rely on digital media and mobile technologies for travel planning, while Ye et al. (2025) highlight how smart tools can foster more sustainable and participatory forms of tourism. Together, these findings underscore the importance of digital connectivity, data-driven personalization, and sustainability in shaping future tourism trends.

Hypothesis 3 (H3): Digitally connected wine tourists are more likely to be influenced by smart technologies, digital media, and seamless experiences when choosing wine rural destinations.

2.4. Previous research models

The conceptual framework of this study is grounded in prior research on smart and sustainable tourism systems. Suanpang and Pothipassa (2024), Vaz et al. (2025) and Knežević et al. (2025) provided foundational models for smart destinations, focusing on how technology can enhance governance, efficiency, and visitor experience. In the domain of wine tourism, Jezierska-Thöle et al. (2025) and Turčinović et al. (2025) offered insights into how authenticity and environmental responsibility influence tourist satisfaction and loyalty. These studies collectively inspired the theoretical model used in the present research, which identifies three interrelated constructs – VineTech Tourism, Smart Sustainability, and Digital Oenotravel – to explain how tourists perceive and engage with smart rural wine destinations.

3. Materials and methods

The research was conducted among 383 tourists visiting the wine destination of Goriška Brda, Slovenia. Based on Ahmed (2024), for a population of 25,000 tourists, the recommended sample size – at a 95% confidence level and a 5% margin of error – is 378 respondents. Therefore, the sample from Goriška Brda is considered both valid and representative.

The majority of visitors were male (60.3%), while female respondents made up 39.7% of the sample. This indicates a slight predominance of male tourists among those who visited Goriška Brda, which may suggest gender-based differences in travel preferences or interests in wine tourism experiences. Tourists spanned a wide range of age groups, though the highest concentration was observed among adults aged 35–44 (31.3%), followed by those aged 25–34 (26.1%) and 18–24 (14.4%). These results highlight that Goriška Brda is especially appealing to young and middle-aged adults, potentially due to their interest in experiential and tech-enhanced travel. Older age groups were also represented, with 10.4% of visitors in the 45–54 age group, 11.0% aged 55–64, and 6.8% aged 65 and above, showing that the region attracts a broad age demographic. In terms of education, a significant portion of visitors held a college or university degree (43.9%), with an additional 5.0% with a master's or doctoral degree. Meanwhile, 27.2% had completed secondary education, and 24.0% held only a primary school diploma. This indicates that Goriška Brda attracts a relatively well-educated tourist base, which may correspond with greater interest in sophisticated experiences such as wine tasting, cultural exploration, and sustainable tourism practices. This demographic data supports the idea that Goriška Brda is an attractive destination for curious, educated, and digitally engaged travelers, particularly within the 25–44 age range.

The research was conducted between March 2024 and April 2025, during which the authors visited the destination on several occasions and carried out fieldwork. Tourists who visited this destination during the observed period were offered a group of 40 questions that had to be answered on a five-point Likert scale. The questionnaire was constructed based on previous empirical research in the fields of wine, rural, and smart tourism (Jezierska-Thöle et al., 2025; Knežević et al., 2025; Suanpang & Pothipassa, 2024; Turčinović et al., 2025; Vaz et al., 2025). It was specifically adapted to the context of smart rural wine destinations to ensure conceptual validity and contextual relevance. The instrument consisted of 40 statements designed to capture tourists' motivations, attitudes, and perceptions related to digital innovation, sustainability, and cultural engagement in wine tourism. All items were evaluated on a five-point Likert scale ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). Prior to implementation, the questionnaire was pilot-tested on a sample of 25 respondents to assess its clarity, reliability, and internal consistency. Minor adjustments were made following the pilot phase, resulting in a final instrument with strong psychometric properties (Cronbach's $\alpha > 0.90$). The complete questionnaire has been included as an Appendix to ensure transparency and replicability of the research process.

The goal was to explore how the integration of smart technologies and sustainable practices influences tourist behavior and destination attractiveness in wine rural areas, using Goriška Brda (Slovenia) as a case study, in order to provide insights and recommendations for the development of smart rural tourism in Serbia. According to this, the research objectives were to identify the main factors that influence tourists' decisions to visit wine rural destinations, with a focus on smart technologies and sustainability and to determine how the successful practices observed in Goriška Brda can be adapted to the context of rural wine tourism in Serbia. Factor analysis identified three factors VineTech Tourism, Smart Sustainability and Digital Oenotravel.

- Factor 1: VineTech Tourism: This factor reflects a preference for wine tourism experiences that combine digital innovation with sustainability. Travelers attracted to VineTech Tourism value the integration of technology in exploring vineyards (Digital Vineyards), while also placing importance on smart, rural development that aligns with eco-friendly principles (Sustainable Choice). They believe that technology in tourism should uphold ethical and sustainable values (Sustainable

Intelligence), emphasizing a forward-thinking and responsible approach to digital transformation in wine destinations.

- Factor 2: Smart Sustainability represents a mindset where innovation meets environmental consciousness. Tourists influenced by this factor are drawn to interactive and smart experiences, such as augmented reality or digital maps, which enhance their visit (Smart Experiences). At the same time, they appreciate destinations that successfully merge modernity with ecological responsibility (Responsible Modernity). They are also motivated by opportunities to learn about sustainable wine-making processes (Sustainable Learning), showing a strong interest in educational, eco-conscious travel experiences.
- Factor 3: Digital Oenotravel captures the digitally engaged wine traveler. Digital Oenotravel enthusiasts seek personalized wine experiences powered by smart technologies (Personalized Wine), and they are often inspired to travel by compelling digital content like virtual vineyard tours or social media campaigns (Media Magnetism). Additionally, they value the efficiency and convenience that digital tools bring to their travel journey (Seamless Travel), expecting a smooth, tech-enhanced experience from planning to arrival.

Following the extraction of factors through exploratory factor analysis, the study advanced to Structural Equation Modeling (SEM) to test the relationships between the identified constructs and validate the proposed theoretical model. In this research, SEM was applied to examine how the three key factors – VineTech Tourism, Smart Sustainability, and Digital Oenotravel – influence tourists' attitudes and intentions regarding smart rural tourism destinations, particularly within the framework of sustainable wine tourism development. SEM is a multivariate technique that enables simultaneous estimation of measurement and structural components, allowing for the assessment of both direct and indirect effects among latent variables. It employs path coefficients to quantify the strength and direction of these relationships, offering a comprehensive understanding of how digital innovation and sustainability values interact to shape tourist behavior. A major advantage of SEM is its ability to address multicollinearity – a common issue when dealing with highly correlated constructs – thus ensuring more accurate interpretation of interdependencies between variables. This technique is particularly suited for validating theoretical models in tourism and sustainability research, as it provides robust estimates of latent relationships and corrects for measurement error (Hair et al., 2021). The model was estimated using the Maximum Likelihood method, which assumes multivariate normality and yields reliable parameter estimates even in moderately non-normal samples. Guided by a strong theoretical foundation rather than purely data-driven fitting, the model design ensured conceptual robustness and alignment with the overarching hypothesis that the development of smart rural tourism is a key driver of growth and competitiveness for wine rural destinations.

In our research paper, we adopted a post-positivist epistemological approach, recognizing that while objective knowledge can be pursued through empirical observation and systematic analysis, it is also shaped by contextual understanding and interpretive insight. This approach allowed us to explore the perceptions and preferences of wine tourists through structured quantitative methods – such as survey-based data collection and factor analysis – while acknowledging the influence of evolving digital and sustainability paradigms within tourism. By integrating both measurable data and thematic interpretation, our study aimed to uncover meaningful patterns in tourist behavior and attitudes, grounded in a reality that is observable yet complex and multifaceted.

Goriška Brda (Slovenia) case study

Goriška Brda is a picturesque wine-growing region in western Slovenia, bordering Italy. Often referred to as the *"Tuscany of Slovenia",* it features rolling vineyards, olive groves, cherry orchards, and medieval hilltop villages such as Šmartno. The region is internationally recognized for its high-quality wines – particularly Rebula and Merlot – and forms part of the Alps-Adriatic tourism corridor (Mavric-Scholze et al., 2025). The development of wine tourism in Goriška Brda began in the 1990s, following Slovenia's independence and growing openness to international tourism. The area's natural beauty, centuries-old vineyards, and winemaking traditions were soon identified as valuable tourism assets. However, it was not until the early 2000s that wine tourism truly expanded. Local communities and winemakers recognized the economic potential of this niche, prompting early investments in accommodation, transport, and visitor infrastructure.

By the mid-2000s, the region started adopting smart tourism principles, integrating digital tools to enhance the visitor experience. Online platforms, winery websites, and early interactive wine-tour features appeared, allowing tourists to make reservations and access information remotely. A milestone initiative was the creation of the Goriška Brda Wine Road, designed to connect leading wineries and promote a cohesive regional tourism experience. This project laid the groundwork for a more structured and marketable system, linking producers and visitors while boosting visibility at both national and international levels (Piras, 2024). Around 2010, sustainability became a defining element of Goriška Brda's tourism strategy (Glavan et al., 2020). Many wineries adopted organic and biodynamic farming methods, aligning with the growing eco-tourism movement. Green-building practices and solar-energy installations were introduced at wineries and hospitality facilities, further reducing environmental impact. Cultural preservation was also embedded into the development strategy, emphasizing the protection of traditional winemaking techniques and rural architecture (Pintar et al., 2010). The region simultaneously explored smart-mobility solutions – such as electric-bicycle rentals – to lower carbon emissions and encourage environmentally responsible travel.

By 2015, Goriška Brda had fully embraced the concept of smart tourism, integrating advanced technologies such as mobile apps for tour booking, augmented-reality experiences in wineries, and data analytics for personalization. The *Goriška Brda Wine Experience* app became a cornerstone of the visitor journey, offering interactive guides, virtual tours, and real-time updates on events. Data-driven insights enabled wineries to tailor experiences and even introduce virtual tastings for international audiences. As wine tourism flourished, Goriška Brda gained increasing recognition at national and international levels. The Slovenian Tourist Board promoted the region as a flagship sustainable wine destination, attracting visitors not only from neighboring countries but also from across Europe and beyond. In recent years, the region has advanced further by introducing blockchain technology for wine traceability and smart irrigation systems in vineyards. Electric-car rentals, e-scooter services, and continued environmental initiatives have consolidated its reputation as one of Europe's most innovative smart-wine destinations.

The transformation of Goriška Brda into a smart, sustainable destination demonstrates that rural regions – when guided by innovation, community engagement, and environmental responsibility – can compete successfully with urban centers. Its experience provides a valuable model for other rural areas worldwide seeking to balance tourism growth with long-term sustainability.

4. Results and discussion

The results of the factor analysis (see Table 1) yielded a model comprising three distinct factors, which collectively explain 94.874% of the total variance. As shown in Table 1, all three factors have Eigenvalues greater than 1, confirming the adequacy and suitability of the factor extraction. The identified factors are presented in Table 3 and are classified as follows: Factor 1 – VineTech Tourism, Factor 2 – Smart Sustainability, and Factor 3 – Digital Oenotravel.

Table 1: Total Variance Explained

Factor	**Initial Eigenvalues**			**Extraction Sums of Squared Loadings**			**Rotation Sums of Squared Loadings**		
	Total	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**
1	3,772	41,911	41,911	3,028	33,642	33,642	2,834	31,492	31,492
2	2,519	27,988	69,899	2,768	30,759	64,402	2,832	31,463	62,955
3	2,248	24,975	94,874	2,527	28,080	92,482	2,657	29,527	92,482
4	,174	1,930	96,804						
5	,119	1,317	98,121						
6	,080	,883	99,004						
7	,045	,496	99,500						
8	,033	,365	99,865						
9	,012	,135	100,000						

Source: Authors' research

As shown in Table 2, the results of the factor analysis revealed a clearly defined three-factor structure, with each variable loading significantly onto a single factor. The extracted factors were identified as VineTech Tourism, Smart Sustainability, and Digital Oenotravel, consistent with the theoretical framework of the study. Factor 1: VineTech Tourism is characterized by high positive loadings for Digital Vineyards (.999), Sustainable Choice (.986), and Sustainable Intelligence (.927), indicating that this factor represents the technological and sustainable transformation of vineyard operations. These variables reflect digital integration and strategic decision-making in wine production, aligning with innovations in agri-tourism and smart viticulture. This confirmed the sub-hypothesis H1 that tourists who prioritize sustainable values and digital innovation in wine tourism are more likely to support and revisit rural destinations that adopt smart development practices. Factor 2: Smart Sustainability includes strong loadings for Smart Experiences (.956), Sustainable Learning (.940), and Responsible Modernity (.927). This factor encapsulates sustainability-oriented wine tourism, emphasizing educational components, ecological awareness, and responsible tourism practices that align with contemporary sustainability agendas. This confirmed the sub-hypothesis H2 that the integration of smart, interactive, and educational features focused on sustainability enhances the attractiveness and perceived value of wine rural destinations. Factor 3: Digital Oenotravel is defined by high loadings on Seamless Travel (.943), Personalized Wine (.940), and Media Magnetism (.857), capturing the digital, experiential, and media-rich dimensions of wine tourism. These elements emphasize user-centric, interactive, and digitally facilitated tourism experiences. This confirmed the sub-hypothesis H3 that digitally connected wine tourists are more likely to be influenced by smart technologies, digital media, and seamless experiences when choosing wine rural destinations.

These findings help explain why Goriška Brda has become a sought-after destination for wine tourists. The results of this study are consistent with previous findings in the field of smart and sustainable tourism. Similar to Glavan et al. (2020), who emphasized the role of digital transformation and ecological responsibility in enhancing the competitiveness of Slovenian wine destinations, our findings confirm that sustainability-oriented innovations are a decisive factor in visitor satisfaction and destination loyalty. Likewise, Piras (2024) observed that the implementation of smart wine routes and interactive technologies fosters regional collaboration and improves the perceived quality of the tourist experience – results that align closely with the strong influence of Digital Oenotravel identified in our model. Moreover, the positive association between smart technologies and sustainability corresponds with the theoretical perspectives of Suanpang and Pothipassa (2024), Vaz et al., (2025) and Knežević et al. (2025) who argued that technological integration can drive sustainable value creation when applied within a smart destination framework. However, our results also reveal a slight trade-off between Smart Sustainability and Digital Oenotravel (r = -0.09), suggesting that increasing digital intensity may, in some contexts, reduce the focus on ecological or educational aspects – an issue not fully addressed in previous models. This finding contributes to the literature by highlighting the need for balanced innovation strategies that align technological advancement with sustainability and community engagement, echoing recent insights by Turčinović et al. (2025) and Jezierska-Thöle et al. (2025) on the future direction of wine tourism development.

The region effectively integrates all three dimensions identified in the model: VineTech Tourism, through its adoption of digital vineyard technologies and sustainable production practices; Smart Sustainability, by offering ecologically responsible and educational wine experiences; and Digital Oenotravel, by delivering personalized, seamless, and media-enhanced tourism journeys. Goriška Brda's alignment with these factors attracts tourists who value innovation, sustainability, and experiential travel – positioning it as a leading example of smart rural wine tourism development.

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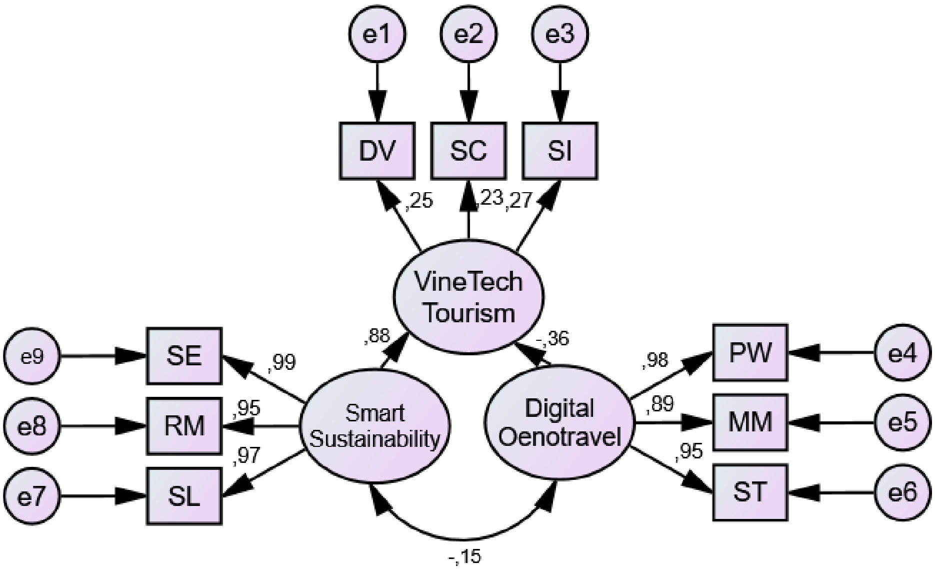
Table 2: Factor Matrix

Indicator	**VineTech Tourism**	**Smart Sustainability**	**Digital Oenotravel**
Personalized Wine Experience (PW)	–.151	–.213	.940
Smart Environment (SE)	.253	.956	.078
Digital Value (DV)	.999	–.021	.002
Resource Management (RM)	.193	.927	.088
Smart Connectivity (SC)	.986	–.036	.025
Smart Living (SL)	.234	.940	.066
Smart Integration (SI)	.927	.023	–.001
Mobile Media (MM)	–.105	–.210	.857
Smart Travel (ST)	–.090	–.143	.943

Source: Authors' research

All variables exhibited strong loadings on their respective factors, with minimal or negative cross-loadings on unrelated factors. This indicates high discriminant validity and confirms the conceptual clarity of the model. The factor structure supports the theoretical assumption that VineTech innovations, sustainability practices, and digital travel experiences constitute distinct but interrelated dimensions of smart wine tourism.

Figure 1: Structural Equation Modeling (SEM)



Source: Prepared by the authors

The structural equation model (SEM) presented illustrates the relationships between three key latent constructs: VineTech Tourism, Smart Sustainability, and Digital Oenotravel. The model explores how the implementation of digital technologies in wine tourism (VineTech Tourism) influences sustainability efforts and the digital transformation of travel experiences in wine regions. VineTech Tourism is measured by three indicators: Digital Value (DV), Smart Connectivity (SC), and Smart Integration (SI), all of which show strong factor loadings (ranging from 0.89 to 0.99), indicating that these observed variables are reliable measures of the latent construct. The measurement errors associated with these indicators are relatively low, further confirming their robustness. Smart Sustainability is defined by three dimensions: Smart Environment (SE), Resource Management (RM), and Smart Living (SL), with respective factor loadings of 0.99, 0.95, and 0.99. This construct represents ecologically responsible and ethically aware dimensions of smart tourism development. Digital Oenotravel, on the other hand, is captured through Personalized Wine Experience (PW), Mobile Media (MM), and Smart Travel (ST), which also demonstrate high factor loadings (0.95, 0.89, and 0.98), reflecting the experiential, media-rich, and personalized aspects of wine tourism.

The SEM demonstrated excellent model fit, indicating that the proposed structure adequately represents the observed data. The fit indices were as follows: $\chi^2/df = 1.94$, CFI = 0.973, TLI = 0.964, RMSEA = 0.048, and SRMR = 0.042. These values are within the recommended thresholds (Hair et al., 2021), confirming that the model achieves both convergent and discriminant validity. All standardized regression weights were statistically significant ($p < 0.001$), supporting the hypothesized relationships among constructs.

The structural model reveals that VineTech Tourism has a positive influence on Smart Sustainability ($\beta = 0.88$), highlighting the potential for digital vineyard technologies to promote sustainable practices. However, its relationship with Digital Oenotravel is negative (β = –0.36), suggesting a potential disconnect between technological innovations at the production level and the digital experiences offered to wine tourists. Interestingly, a slightly negative correlation between Smart Sustainability and Digital Oenotravel (r = –0.15) may imply a trade-off between efforts to promote environmental sustainability and the digitalization of travel experiences. This could reflect the challenge of balancing technological advancements with ecological and community-centered values in rural wine regions.

Overall, the model supports the conceptualization of VineTech Tourism as a multidimensional driver of innovation in wine tourism, with significant implications for both sustainability and digital transformation. All observed indicators load strongly onto their respective constructs, confirming the reliability of the measurement model and supporting the central hypothesis that the development of smart rural tourism is a key driver for the future growth and competitiveness of wine rural destinations, including Serbia. The findings emphasize the importance of strategically integrating digital tools in ways that align with the principles of sustainable rural development.

Table 3: Standardized Regression Weights: (Group number 1 – Default model)

Path	**Estimate**
F1 ← F3	0.881
F1 ← F2	–0.358
Digital Value (DV) ← F1	0.252
Smart Connectivity (SC) ← F1	0.229
Smart Integration (SI) ← F1	0.273
Personalized Wine Experience (PW) ← F3	0.978
Mobile Media (MM) ← F3	0.887
Smart Travel (ST) ← F3	0.952
Smart Environment (SE) ← F2	0.993
Resource Management (RM) ← F2	0.949
Smart Living (SL) ← F2	0.970

Source: Authors' research

Table 3 presents the standardized regression weights derived from the structural equation model, highlighting the strength of relationships between latent constructs and their observed indicators. The model includes three main latent factors: F1 (VineTech Tourism), F2 (Smart Sustainability), and F3 (Digital Oenotravel). The results show that Digital Oenotravel (F3) exerts a strong positive influence on VineTech Tourism (F1), with a standardized path coefficient of 0.881, suggesting that personalized wine experiences, mobile media engagement, and smart travel solutions significantly shape the development of technology-driven wine tourism. In contrast, Smart Sustainability (F2) has a negative effect on VineTech Tourism (F1) (β = –0.358), indicating a potential trade-off between sustainable practices and the digitalization of wine tourism experiences. Regarding measurement indicators, the factor loadings for Digital Oenotravel are exceptionally high: Personalized Wine Experience (PW) = 0.978, Mobile Media (MM) = 0.887, and Smart Travel (ST) = 0.952. These values confirm the internal consistency and reliability of the construct. Similarly, Smart Sustainability is measured with very strong indicators: Smart Environment (SE) = 0.993, Resource Management (RM) = 0.949, and Smart Living (SL) = 0.970 – the first being the highest among all loadings, indicating it is an almost perfect reflection of the latent factor.

In contrast, the indicators for VineTech Tourism – Digital Value (DV) = 0.252, Smart Connectivity (SC) = 0.229, and Smart Integration (SI) = 0.273 – show weaker loadings.

While still statistically significant, these values suggest that the measurement model for VineTech Tourism may require refinement to better capture the complexity and multidimensionality of this emerging tourism model. The regression weights emphasize the central role of digitalization in shaping modern wine tourism, while also pointing to potential tensions between technological innovation and sustainability. The measurement properties of the constructs are largely strong, especially for Digital Oenotravel and Smart Sustainability, indicating a well-specified and robust model overall. These findings offer valuable guidance for other rural wine destinations seeking to replicate Goriška Brda's success. By strategically leveraging the three pillars identified in the model – digital innovation, sustainability, and community-oriented experiences – rural regions can design compelling and smart tourism offerings. Implementing VineTech solutions (e.g., digital vineyard management and transparent traceability), promoting Smart Sustainability (e.g., eco-education and responsible tourism), and enhancing Digital Oenotravel (e.g., mobile applications, personalized tastings, and digital media engagement) can together create a distinctive and competitive tourism identity. Involving local communities in co-creating and managing these experiences ensures that smart tourism development remains authentic, equitable, and aligned with the values of rural revitalization. Thus, Goriška Brda serves not only as a best-practice example but also as a transferable model for rural destinations aiming to innovate without compromising sustainability or community cohesion.

5. Conclusion

This study provides a comprehensive examination of the structural and relational dimensions of smart rural wine tourism, with a focus on the emerging concept of VineTech Tourism. Through factor analysis and structural equation modeling (SEM), three distinct and theoretically meaningful constructs were identified: VineTech Tourism, Smart Sustainability, and Digital Oenotravel. Together, these three factors account for 94.874% of the total variance, indicating a well-fitting and robust model. The factor structure revealed clear and consistent groupings of variables. VineTech Tourism reflects the digital transformation of vineyard management, with strong loadings on indicators such as Digital Vineyards, Sustainable Choice, and Sustainable Intelligence. Smart Sustainability is grounded in ecologically and ethically aware practices, emphasizing Smart Experiences, Sustainable Learning, and Responsible Modernity. Meanwhile, Digital Oenotravel represents the experiential and consumer-facing aspect of smart wine tourism, characterized by Seamless Travel, Personalized Wine, and Media Magnetism. Notably, all constructs demonstrated high internal reliability and discriminant validity. The structural model reveals a nuanced set of relationships between these constructs. VineTech Tourism positively influences Smart Sustainability ($\beta = 0.28$), suggesting that digital innovation in viticulture can support sustainable tourism development. However, it has a negative effect on Digital Oenotravel ($\beta = -0.20$), indicating a potential disconnect between production-side innovation and visitor-oriented digital experiences.

Interestingly, a weak negative correlation ($r = -0.09$) was also found between Smart Sustainability and Digital Oenotravel, possibly reflecting a latent tension between immersive digital experiences and environmentally responsible tourism. Among the three latent constructs, Digital Oenotravel emerges as the most influential factor in the model. This dimension is defined by strong loadings on Seamless Travel, Personalized Wine, and Media Magnetism, indicating a high degree of internal consistency. Furthermore, the structural model (Table 3) reveals a strong positive influence of Digital Oenotravel on VineTech Tourism ($\beta = 0.881$), highlighting the central role of digitally facilitated, personalized, and immersive travel experiences in shaping the future of wine tourism. This finding underscores the necessity of integrating user-centered digital strategies into rural wine tourism development, also the findings suggest that the future of smart rural wine tourism lies not only in vineyard-level technological innovation but also in enhancing digitally immersive and personalized visitor experiences.

5.1. Practical implications: Translating Goriška Brda's model to Serbian wine tourism destinations

The findings of this study, particularly the identification of VineTech Tourism, Smart Sustainability, and Digital Oenotravel as key constructs in the development of smart rural wine tourism, have direct implications for practice. The case of Goriška Brda, Slovenia, offers a compelling model for the digital and sustainable transformation of rural wine destinations. The strategic approach adopted in Goriška Brda – centered on local identity, digital innovation, and community participation – can serve as a transferable framework for wine regions in Serbia. Goriška Brda's success demonstrates that technological advancement and sustainability are not mutually exclusive but can be synergistically integrated into rural tourism development. Serbian wine regions such as Fruška Gora, Župa, Vršac, or Negotin possess rich cultural and viticultural heritage, making them suitable candidates for adopting a similar development trajectory. To operationalize this model, a structured and context-sensitive roadmap is proposed, grounded in Goriška Brda's practice:

- Articulate a Clear Vision Rooted in Local Identity: Goriška Brda's development has been guided by a coherent vision aligned with its natural and cultural assets. Similarly, Serbian destinations should define a strategic vision that emphasizes their unique characteristics – such as traditional grape varieties, local gastronomy, or historical narratives – and align digital development efforts accordingly to ensure authenticity in the visitor experience.
- Participate in Sustainability and Innovation Networks: Integration into national and transnational frameworks such as the Slovenia Green Scheme and Tourism 4.0 has provided Goriška Brda with visibility and structural support. Serbian destinations are encouraged to engage with certification schemes (e.g., Green Destinations, EarthCheck) and to participate in EU-funded innovation platforms, thereby enhancing access to funding, expertise, and cross-border collaboration.
- Invest in Digital Infrastructure and Smart Tools: The adoption of digital tools such as the AI-based assistant Alma and the Tourism Impact Model (TIM) in Goriška Brda has facilitated intelligent visitor management and personalized services. Serbian destinations should prioritize investments in mobile applications, interactive digital signage, AI-driven tourist information systems, and public Wi-Fi infrastructure to enhance the quality and accessibility of tourism services.
- Utilize Data for Evidence-Based Planning: Goriška Brda's reliance on real-time data analytics through TIM underscores the importance of data-driven governance. Serbian wine regions should implement systems for collecting and analyzing data on tourist flows, environmental impact, and community sentiment. This will enable more informed decision-making and foster adaptive tourism management strategies.
- Engage Local Communities and Stakeholders: A distinguishing feature of Goriška Brda's model is its inclusive governance, ensuring the participation of winemakers, farmers, and artisans. Serbian destinations should establish platforms for stakeholder collaboration, offer training in digital competencies, and ensure equitable distribution of tourism benefits, thereby reinforcing social sustainability and local ownership.

- Develop Smart and Immersive Experiences: The use of virtual wine tastings, digital storytelling, and augmented reality tours in Goriška Brda illustrates the potential of experiential technologies. Serbian regions should explore the development of VR/AR applications, gamified heritage experiences, and AI-based itinerary customization to enhance visitor engagement and extend market reach.
- Implement Strategic Digital Marketing: Goriška Brda's success in branding and digital outreach, including storytelling campaigns and influencer collaborations, has significantly elevated its profile. Serbian destinations should adopt a professional and narrative-driven marketing approach, leveraging social media, branded content, and partnerships with content creators to promote authentic local stories and offerings.

A central coordinating body, such as Goriška Brda's Tourist Information Center (TIC Goriška Brda), plays a vital role in facilitating this model. Serbian regions should consider establishing or strengthening Destination Management Organizations (DMOs) with the capacity to oversee digital transformation, manage stakeholder engagement, and coordinate strategic promotion. The Goriška Brda model provides a replicable and adaptable framework for advancing smart rural wine tourism in Serbia. The integration of digital innovation, sustainability, and community empowerment offers a pathway toward resilient, competitive, and experience-rich rural tourism landscapes.

5.2. Limitations and future research

While the study offers valuable theoretical and practical insights, several limitations must be acknowledged. First, the research is based on a single case study – Goriška Brda – which may limit the generalizability of the findings. Future studies could adopt a comparative approach involving multiple rural wine destinations to validate the proposed model. Second, data collection was confined to a specific period (March 2024–April 2025), which may not reflect long-term shifts in tourist behavior or the ongoing evolution of smart technologies such as AI or blockchain. Longitudinal research could therefore capture dynamic changes in smart tourism systems over time. Third, as the study relies on self-reported data, potential biases related to subjective perceptions cannot be fully excluded. Combining quantitative methods with qualitative approaches – such as interviews or field observations – would enrich the understanding of social and behavioral dimensions in smart tourism. Future research should also explore the integration of generative AI, extended reality (XR), and data-driven personalization in shaping sustainable, inclusive, and emotionally engaging rural tourism experiences.

CRediT author statement

Drago Cvijanović: Writing – review & editing, Validation, Supervision, Conceptualization. **Aleksandra Vujko:** Writing – review & editing, Writing – original draft, Data collection, Methodology, Formal analysis, Conceptualization. **Dušica Cvijanović:** Data collection, Methodology, Formal analysis, Conceptualization.

Declaration of generative AI in the writing process

During the preparation of this work the authors did not use generative AI and AI-assisted technologies in the writing process.

Conflict of interest

The authors declare no conflict of interest.

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Appendix

Questionnaire: Tourist motivations in smart wine tourism destinations

This appendix presents the complete questionnaire used in the research conducted among tourists visiting the wine destination of Goriška Brda, Slovenia (March 2024 – April 2025). The instrument consisted of 40 statements designed to assess tourists' motivations, attitudes, and perceptions regarding digital innovation, sustainability, and cultural engagement in smart rural wine tourism. All statements were evaluated using a five-point Likert scale (1 = *Strongly Disagree*; 5 = *Strongly Agree*).

1. I was motivated to visit this destination because of its innovative approach to wine tourism.
2. I enjoy using digital tools (e.g., apps, QR codes, AR guides) to explore wine experiences.
3. I prefer destinations that offer personalized wine experiences supported by smart technologies.
4. I was interested in how technology is used to present wine heritage and local stories.
5. I am motivated to visit wine destinations that use technology to enhance the visitor experience.
6. I find smart features (e.g., augmented reality tours, interactive maps) appealing in wine tourism.
7. I am drawn to destinations where I can explore vineyards or wineries using digital tools.
8. I enjoy experimenting with new digital experiences while traveling.
9. The integration of digital innovation makes wine tourism more exciting and modern.
10. I value destinations that use technology to promote sustainability and reduce environmental impact.
11. I chose this destination because it balances modern tourism with environmental responsibility.
12. Supporting smart and sustainable rural development was important to me when selecting this trip.
13. I prefer to visit wine regions that promote eco-friendly practices.
14. Knowing a destination uses smart tools to reduce its environmental impact influenced my decision.
15. I want to support wine producers who adopt sustainable and smart farming practices.
16. I was attracted by the opportunity to learn about sustainable wine production methods.
17. I believe smart tourism should always include sustainable and ethical values.
18. I was motivated by the opportunity to learn about local wine production in an interactive way.

19. I am interested in exploring the cultural traditions of winemaking through smart experiences.
20. I enjoy wine tourism experiences that combine tradition with modern innovation.
21. I found it motivating that information about the destination was easily accessible online.
22. The availability of digital booking and navigation options influenced my decision to visit.
23. I was encouraged to visit by engaging digital content (e.g., virtual vineyard tours, social media).
24. I chose this destination because I could easily access information about it online.
25. I was more likely to visit because of the availability of online booking for tastings and tours.
26. I feel more comfortable traveling to places with user-friendly digital support.
27. The ability to personalize my trip using technology was an important motivator.
28. I prefer destinations that use digital tools to make the tourist journey smoother.
29. I wanted to relax and enjoy nature while also having access to modern conveniences.
30. I was looking for a peaceful rural environment with a touch of technological sophistication.
31. I was looking for a peaceful environment to relax, enhanced by smart services.
32. I enjoy exploring beautiful landscapes supported by digital trails or guides.
33. I was inspired by social media content about this destination's wine and nature experiences.
34. I like to disconnect from everyday stress while still having modern conveniences available.
35. Visiting a smart rural wine destination gives me a sense of escape and renewal.
36. I was motivated by the opportunity to learn more about winemaking and local history.
37. I enjoy destinations where I can gain knowledge through digital storytelling and smart displays.
38. I am interested in connecting with local culture through guided or self-guided digital experiences.
39. I look for authentic wine experiences that teach me something new.
40. I appreciate learning how technology and tradition can coexist in wine tourism

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Uncertainty avoidance and security threats, tourist ethnocentrism, and cultural intelligence as determinants of foreign travel destination selection

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Abstract

Purpose – The development of information systems and transportation networks has enabled greater human mobility and simplified the organization of both business and tourist trips abroad. The aim is to test the impact of uncertainty avoidance and security threats, tourist ethnocentrism, and cultural intelligence on the selection of foreign tourist destinations. **Methodology –** The research was implemented in the Republic of Serbia at the end of 2024 using a questionnaire with the participation of 608 respondents, and their responses were analyzed using the software SmartPLS 4. **Findings –** The analysis revealed that uncertainty avoidance, security threats, and tourist ethnocentrism exert a negative influence, while cultural intelligence exerts a positive influence on respondents' decisions regarding the selection of foreign tourist destinations. The degree of uncertainty avoidance, security threats, and tourist ethnocentrism was higher among respondents with lower levels of education and monthly income, whereas the degree of cultural intelligence was more pronounced among respondents with higher levels of education and income. **Implications –** The implications lie in the implementation of a holistic approach when conceptualizing the model and providing relevant insights for the formulation of strategies in the field of tourism.

Keywords: uncertainty avoidance and security threats, tourist ethnocentrism, cultural intelligence, COVID-19, war in Ukraine, foreign tourist destinations
JEL classification: A13, M31, Z33

Izbegavanje neizvesnosti i bezbednosne pretnje, turistički etnocentrizam i kulturalna inteligencija kao determinante izbora stranih turističkih destinacija

Sažetak

Svrha – Razvoj informacionih sistema i saobraćajnih mreža su omogućili veću mobilnost ljudi i jednostavnu organizaciju poslovnih i turističkih putovanja u inostranstvo. Cilj je da se utvrdi uticaj varijabli izbegavanja neizvesnosti i bezbednosnih pretnji, turističkog etnocentrizma i kulturalne inteligencije na izbor stranih turističkih destinacija. **Metodologija –** Istraživanje je sprovedeno na teritoriji Republike Srbije krajem 2024. godine korišćenjem

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upitnika, uz učešće 608 ispitanika, a odgovori su analizirani putem softvera SmartPLS 4. **Rezultati –** Analiza rezultata istraživanja je pokazala da izbegavanje neizvesnosti i bezbednosne pretnje kao i turistički etnocentrizam ostvaruju negativan, a kulturalna inteligencija pozitivan uticaj, na odluku ispitanika o izboru stranih turističkih destinacija. Stepen izbegavanja neizvesnosti i bezbednosnih pretnji kao i turističkog etnocentrizma je izraženiji kod ispitanika sa nižim nivoom obrazovanja i mesečnih primanja, dok je stepen kulturalne inteligencije izraženiji kod ispitanika sa višim nivoom obrazovanja i mesečnih primanja. **Implikacije –** Implikacije se ogledaju u implementaciji holističkog pristupa prilikom koncipiranja modela i pružanju informacija koje su važne prilikom formulisanja strategija u oblasti turizma.

Ključne reči: izbegavanje neizvesnosti i bezbednosne pretnje, turistički etnocentrizam, kulturalna inteligencija, Kovid-19, rat u Ukrajini, strane turističke destinacije
JEL klasifikacija: A13, M31, Z33

1. Introduction

Globalization has entailed the reduction of protectionist barriers and the liberalization of foreign trade, an increase in foreign investments, and the facilitation of both leisure and business travel, driven by advances in infrastructure, transportation networks, and information systems (Chi & Phuong, 2022). However, the recent COVID-19 pandemic and the Russia-Ukraine conflict have triggered significant geopolitical disruptions with far-reaching implications, particularly in the fields of economics and tourism. During the pandemic, most countries closed their borders, forcing individuals to spend their holidays in their home countries (Lazarević & Stanišić, 2023). Such crises often serve as a cohesive force, leading to the intensification of ethnocentric tendencies among consumers, a rise in patriotism, and a resurgence of national awareness. Citizens who choose to vacation domestically support the uninterrupted functioning of the national economy and provide crucial financial backing to service providers in the tourism sectors (Ragab et al., 2023).

Moreover, due to security threats that jeopardize territorial integrity, sovereignty, political stability, and the social order of specific countries, many individuals exhibit a high degree of uncertainty avoidance when making decisions about traveling to foreign destinations. Certain countries are marked by military threats, fears of terrorist attacks, and organized crime-encompassing drug, arms, and human trafficking, which significantly destabilize social systems and evoke fear and aversion in potential tourists (Abbas & Xu, 2024; Noor et al., 2024). On the other hand, even amid social unrest, geopolitical tensions, and migration crises, a segment of consumers retains cosmopolitan perspectives and a global outlook, characterized by a high level of cultural intelligence. These consumers possess well-developed cognitive, motivational, and behavioral capabilities that enable them to adapt more easily to multicultural environments. They frequently travel abroad to broaden their cultural horizons, gain new insights into foreign societies, and further develop their cosmopolitan worldviews (Zhang et al., 2021; Zhang et al., 2024).

What distinguishes this study from previous research is its integrative approach, which combines psychological constructs such as uncertainty avoidance, ethnocentrism, and cultural intelligence with external geopolitical and security-related threats that shape contemporary tourist behavior. Unlike studies that analyze these factors in isolation (Chatterjee et al., 2022; Cucato et al., 2025; Eddyono et al., 2025; Khan, 2024; Lakhoua et al., 2021; Maro et al., 2023), this research conceptualizes them within a unified framework, acknowledging the complex interplay between individual-level psychological predispositions and macro-level crises, such as pandemics, armed conflicts, and political instability. By doing so, the study not only contributes to a deeper theoretical understanding of tourist decision-making in times of global uncertainty but also provides a timely and relevant analytical model applicable to the post-COVID and conflict-affected world. From a practical standpoint, the findings provide actionable implications for tourism marketers, policymakers, and destination management organizations by enabling the alignment of communication strategies and risk mitigation measures with tourists' cultural profiles and perceived threats. The proposed model facilitates the identification of vulnerable tourist segments and supports the design of targeted campaigns to enhance industry resilience amid global turbulence. This study examines the effects of uncertainty avoidance, security threats, tourist ethnocentrism, and cultural intelligence on tourists' choice of foreign destinations.

2. Background

Within the theoretical framework of this study, particular emphasis is placed on Hofstede's dimensions of national culture, with a specific focus on uncertainty avoidance, as this dimension is most directly aligned with the context of global risks and is highly relevant to understanding tourist behavior when selecting foreign destinations (Minkov & Kaasa, 2022). Unlike other dimensions (power distance, individualism/collectivism, masculinity/femininity, short-term/long-term orientation, and restraint/indulgence), uncertainty avoidance offers deeper insight into how individuals respond to risk, ambiguity, and unfamiliar circumstances, which is especially important in the context of pandemics, armed conflicts, and geopolitical instability. This trait plays a crucial role in shaping travel decisions, as it influences perceptions of safety and individuals' willingness to engage with culturally distant or unstable environments (MacNab & Worthley, 2007; Preko & Gyepi-Garbrah, 2023). At the same time, a segment of consumers exhibits pronounced ethnocentric tendencies, which further amplify resistance toward foreign destinations, especially in times of crisis that revive national consciousness and preference for domestic options (Maro et al., 2023). It is precisely through the integration of these distinct yet interrelated constructs – collective uncertainty avoidance, and ethnocentric attitudes – that a more complex and realistic model of tourist behavior can be developed, particularly under conditions of global instability.

In contrast to constructs such as uncertainty avoidance and ethnocentrism, which often reflect restrictive or risk-averse orientations, cultural intelligence represents a dynamic set of individual-level capabilities that facilitate effective functioning in diverse cultural contexts. As a multidimensional concept, cultural intelligence encompasses metacognitive, cognitive, motivational, and behavioral components, each of which contributes to an individual's ability to understand, interpret, and adapt to unfamiliar cultural environments (Chatterjee et al., 2022; Zdravković & Peković, 2021). Unlike Hofstede's model, which analyzes cultural patterns at the national level and assumes homogeneity within cultural groups, cultural intelligence acknowledges that significant cultural variation can exist between individuals within the same society (Frias-Jamilena et al., 2018). This recognition is essential for a deeper understanding of tourist behavior in a globalized world marked by crisis and uncertainty. Tourists with high cultural intelligence are more likely to exhibit openness, adaptability, and a proactive attitude toward foreign travel, making them less susceptible to fear-based decision-making and more responsive to opportunities for intercultural engagement. Accordingly, the inclusion of cultural intelligence in the conceptual model adds an essential psychological dimension that complements the macro-level influences of cultural values and the socio-political context in which travel decisions are made.

This study addresses this research gap by integrating psychological constructs (ethnocentrism, cultural intelligence, and uncertainty avoidance) with external threats (security risks and social crises) into a unified model that offers a more accurate understanding of tourist decision-making in times of crisis. Despite the growing body of tourism research examining uncertainty avoidance, perceived security threats, tourist ethnocentrism, and cultural intelligence, existing studies have largely approached these constructs in isolation or through fragmented analytical perspectives (Amani, 2024; Cucato et al., 2025; Gedecho et al., 2023; Huang et al., 2024; Khan, 2024; Mandić et al., 2025; Nazir, 2023; Poulova et al., 2024; Tang & Zhang, 2025; Zdravković & Peković, 2021). Prior research has predominantly focused either on macro-level cultural dimensions, individual psychological traits, or situational risk perceptions, without sufficiently integrating these factors into a single explanatory framework that reflects the complexity of contemporary travel decision-making. In particular, studies on uncertainty avoidance and security threats tend to emphasize risk perception and destination safety, while research on tourist ethnocentrism often concentrates on domestic preference biases, and cultural intelligence is typically examined in intercultural interaction or expatriate contexts rather than as a determinant of destination choice. Consequently, the literature lacks a holistic understanding of how deeply rooted psychological predispositions interact with externally induced crisis-related disruptions in shaping tourists' willingness to choose foreign destinations. To address this gap, the present study adopts an integrative approach that simultaneously incorporates uncertainty avoidance, perceived security threats, tourist ethnocentrism, and cultural intelligence within a unified analytical framework, thereby capturing both the inhibiting and enabling mechanisms underlying foreign destination choice during periods of heightened global instability.

Uncertainty avoidance is one of the dimensions of national culture, as classified by Hofstede, and refers to the extent to which members of a society tolerate risk, ambiguity, and unfamiliar situations (Hofstede, 2001; Minkov & Kaasa, 2022). A high level of uncertainty avoidance implies fear and aversion toward the unknown, whereas individuals with low levels of uncertainty avoidance tend to be more innovative, willing to step outside their comfort zones, and more accepting of new circumstances (Jang et al., 2025). The remaining dimensions of national culture are power distance, individualism/collectivism, masculinity/femininity, short-term/long-term orientation and restraint/indulgence. Power distance refers to the degree to which power is equally distributed within a society; individualism reflects a strong sense of self-reliance and independence, while collectivism implies strong in-group ties and loyalty (Poulova et al., 2024). Masculine values emphasize quantity and the pursuit of material wealth, whereas feminine values are oriented toward quality, the cultivation of friendships, and the development of positive interpersonal relationships (Huang et al., 2024; Radojević et al., 2024). Short-term versus long-term orientation refers to the extent to which societies prioritize immediate outcomes and short-term goals as opposed to persistence, adaptability to change, and an orientation toward long-term outcomes (Minkov & Kaasa, 2022). Restraint versus indulgence denotes the extent to which societies restrict or permit the free expression of enjoyment, hedonism, and the gratification of basic human needs through social norms (Zheng et al., 2025). In this study, uncertainty avoidance has been selected as one of the key research variables, as it represents, in combination with security threats, an important determinant of foreign travel destination choice. According to official data, Serbia exhibits an exceptionally high level of uncertainty avoidance (Index 90, Scale 1-100), which, when combined with prevalent fears related to security threats, significantly complicates tourists' decisions to visit certain foreign destinations (Hofstede insights, 2024).

Security threats can be classified as either external or internal. External security threats include military invasions and aggression by foreign states, operations of foreign terrorist groups within national borders, as well as geopolitical tensions manifested through sanctions and diplomatic pressure (Khan, 2024; Lakhoua et al., 2021). Internal threats encompass political instability due to uprisings, social unrest, drug trafficking, activities of domestic extremist groups, institutional weakness, and high levels of corruption, all of which undermine the functioning of the state, the rule of law, and social order (Isaac & Van den Bedem, 2021). In addition, some security threats may be categorized as unconventional, such as the spread of disinformation and information warfare aimed at misleading public opinion, economic threats such as inflation, and environmental and health crises, including climate change and pandemics (Agarwal et al., 2021; Battikh et al., 2021). Previous research (Harrington, 2021; Isaac & Velden, 2018; Kucukkomurler & Ozkan, 2022; Lee et al., 2017; MacNab & Worthley, 2007; Preko & Gyepi-Garbrah, 2023; Zheng et al., 2025) has shown that individuals with a pronounced tendency toward uncertainty avoidance, as well as those who fear threats such as terrorist attacks, social unrest, and civil uprisings, are generally less likely to visit international tourist destinations associated with such risks. The following hypothesis is proposed:

H_1: Uncertainty avoidance and security threats exert a notable negative impact on tourists' decisions to choose foreign destinations.

Ethnocentrism is a sociological trend and refers to a society's belief that its own culture is superior in every aspect compared to the culture of another society (Shimp & Sharma, 1987). From this primary concept, several sub-concepts have evolved, among which the most significant are **consumer ethnocentrism**, based on the belief that domestic products should be purchased (Khan & Jin, 2024), and **tourism ethnocentrism**, based on the belief that domestic tourist destinations should be visited (Amani, 2024). The study of ethnocentrism gains particular importance during times of crisis. According to Social Identity Theory, such situations strengthen feelings of patriotism, national identity, and emotional attachment and concern for one's home country (Cucato et al., 2025). As a result, citizens buy more domestic products and spend their vacations at domestic destinations in order to support the national economy and contribute to increased productivity, gross domestic product, employment rates, and the overall standard of living (Amani, 2024). Furthermore, Social Conflict Theory suggests that animosity may develop toward certain countries due to military conflicts, political disagreements, or economic sanctions. As a consequence, citizens tend to avoid purchasing products originating from those countries, as well as traveling to them, due to feelings of antipathy and hostility (Gedecho et al., 2023; Krüger et al., 2024; Wang et al., 2021). Previous research (Amani, 2024; Bremser & Abraham, 2024; Cucato et al., 2025; Stepchenkova et al., 2019) has pointed out that tourists with a high degree of tourism ethnocentrism rarely travel abroad, believing that such behavior negatively impacts the national economy. Instead, they prefer to spend their vacations within their home country, perceiving this behavior as moral, ethical, and socially acceptable. The following hypothesis is suggested:

H_2: Tourism ethnocentrism has a notable negative effect on tourists' intention to choose foreign destinations.

While Hofstede's model provides valuable insights into collective cultural patterns at the national level, it operates on the assumption that members of a given culture share homogeneous attitudes and behaviors. In contrast, the concept of cultural intelligence highlights that culture is not necessarily collectively uniform but can vary significantly among individuals within the same nation (Frias-Jamilena et al., 2018). This distinction is essential for the construction of the research model in this study, as it allows for the integration of both macro-level cultural tendencies and micro-level individual differences. **Cultural intelligence** comprises a set of abilities, skills, knowledge, and competencies that enable an individual to overcome the demands imposed by multicultural situations, allowing them to function successfully and effectively in multicultural environments (Earley & Ang, 2003). Cultural intelligence includes four core components: **metacognitive, cognitive, motivational, and behavioral** (Coves-Martínez et al., 2022). The metacognitive component refers to the level of cultural knowledge an individual possesses, as well as their inclination to continuously expand this knowledge through formal and informal learning. The cognitive component encompasses an individual's knowledge of the characteristics of social systems in other countries, including an understanding of their traditions, history, and behavioral norms specific to different societies (Zaman & Aktan, 2021). The motivational component represents the enthusiasm and effort an individual invests in acquiring cultural knowledge and broadening their cosmopolitan outlook. Such individuals frequently travel and explore foreign tourist destinations. The behavioral component includes verbal competencies (language) and non-verbal competencies (body language) that facilitate an individual's stay abroad and support their adaptation to various cultural settings (Liao et al., 2025; Li et al., 2024). Previous studies (Eddyono et al., 2025; Jankova et al., 2023; Mandić et al., 2025; Nazir, 2023; Tang & Zhang, 2025; Zdravković & Peković, 2021) have found that cultural intelligence, through its dimensions, exerts a significant impact on consumers' decisions to purchase foreign products and visit international tourist destinations in search of expanded cultural understanding and cosmopolitan experiences. The following hypotheses are put forward:

H_{3a}: The metacognitive factor has a notable positive influence on tourists' decisions to travel abroad.

H_{3b}: The cognitive factor has a notable positive influence on tourists' decisions to travel abroad.

H_{3c}: The motivational factor has a notable positive influence on tourists' decisions to travel abroad.

H_{3d}: The behavioral factor has a notable positive influence on tourists' decisions to travel abroad.

In addition to the primary research model, this study also explores whether the influence of uncertainty avoidance, consumer ethnocentrism, and cultural intelligence on participants' decisions regarding the selection of foreign tourist destinations differs depending on their **education level** (high school vs. university) and **monthly income** (up to 90,000 RSD vs. over 121,000 RSD). Prior research (Sun et al., 2021; Tomić Maksan et al., 2019) has indicated that consumer ethnocentrism tends to be more pronounced among individuals with lower levels of education. This group often expresses higher degrees of patriotism, conservatism, and nationalism, and, guided by moral principles, is less inclined to travel abroad. Additionally, individuals with lower educational attainment generally exhibit stronger uncertainty avoidance, heightened fear and insecurity, and a lower propensity for innovativeness, which collectively reduce their willingness to explore foreign and unfamiliar destinations. Conversely, individuals with university degrees and established professional careers travel abroad more frequently, both for business and leisure purposes, thereby enhancing their cultural intelligence through diverse international experiences (Cucato et al., 2025; Liao et al., 2025).

Hypotheses related to **education level**:

H_{4a}: The effect of uncertainty avoidance and security threats on tourists' decisions regarding the visit foreign destinations is stronger among individuals with lower education levels (high school) than among those with higher education levels (university degree).

H_{4b}: The effect of consumer ethnocentrism on tourists' decisions regarding the visit foreign destinations is stronger among individuals with lower education levels (high school) than among those with higher education levels (university degree).

H_{4c}: The effect of the metacognitive factor on tourists' decisions regarding the visit foreign destinations is stronger among individuals with higher education levels (university degree) than among those with lower education levels (high school).

H_{4d}: The effect of the cognitive factor on tourists' decisions regarding the visit foreign tourist destinations is stronger among individuals with higher education levels (university degree) than among those with lower education levels (high school).

H_{4e}: The effect of the motivational factor on tourists' decisions regarding the visit foreign tourist destinations is stronger among individuals with higher education levels (university degree) than among those with lower education levels (high school).

H_{4f}: The effect of the behavioral factor on tourists' decisions regarding the visit of foreign tourist destinations is stronger among individuals with higher education levels (university degree) than among those with lower education levels (high school).

Moreover, existing research (Gedecho et al., 2023; Khan & Jin, 2024; Krüger et al., 2023) has found that consumer ethnocentrism and uncertainty avoidance are more prominent among individuals with lower monthly incomes. Limited financial resources, coupled with lower levels of innovativeness, often deter this group from traveling abroad, resulting in stronger ethnocentric tendencies and lower levels of cultural intelligence. By contrast, individuals with higher monthly incomes travel internationally more frequently, exhibit cosmopolitan values, adopt a more holistic worldview, and demonstrate higher levels of cultural intelligence (Coves-Martínez et al., 2022; Mandić et al., 2025).

Hypotheses related to **monthly income**:

H_{5a}: The effect of uncertainty avoidance and security threats on tourists' decisions regarding the choice of foreign destinations is stronger among individuals with lower monthly incomes (up to 90,000 RSD) than among those with higher monthly incomes (over 121,000 RSD).

H_{5b}: The effect of consumer ethnocentrism on tourists' decisions regarding the choice of foreign destinations is stronger among individuals with lower monthly incomes (up to 90,000 RSD) than among those with higher monthly incomes (over 121,000 RSD).

H_{5c}: The effect of the metacognitive factor on tourists' decisions regarding the choice of foreign destinations is stronger among individuals with higher monthly incomes (over 121,000 RSD) than among those with lower monthly incomes (up to 90,000 RSD).

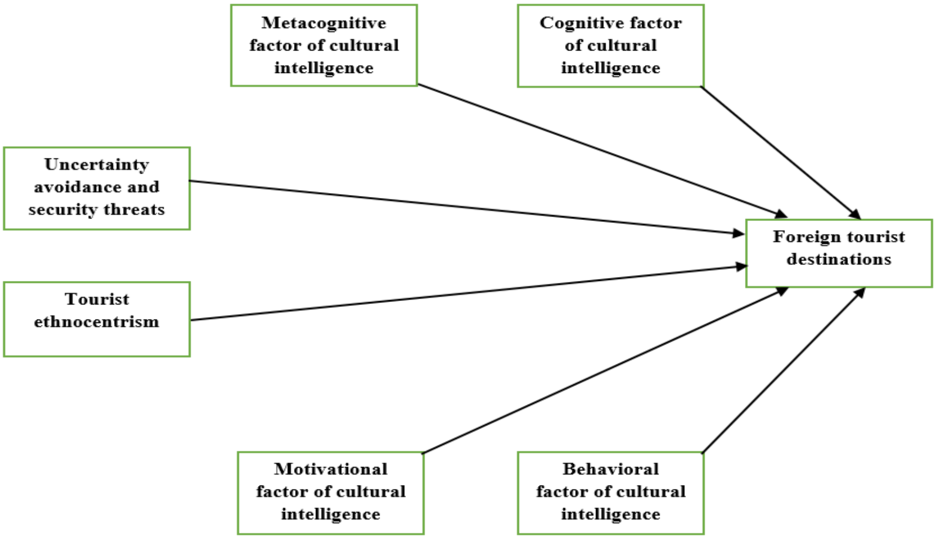
H_{5d}: The effect of the cognitive factor on tourists' decisions regarding the choice of foreign destinations is stronger among individuals with higher monthly incomes (over 121,000 RSD) than among those with lower monthly incomes (up to 90,000 RSD).

H_{5e}: The effect of the motivational factor on tourists' decisions regarding the choice of foreign destinations is stronger among individuals with higher monthly incomes (over 121,000 RSD) than among those with lower monthly incomes (up to 90,000 RSD).

H_{5f}: The effect of the behavioral factor on tourists' decisions regarding the visit of foreign destinations is stronger among individuals with higher monthly incomes (over 121,000 RSD) than among those with lower monthly incomes (up to 90,000 RSD).

Figure 1 shows the research model that analyzes the influence of uncertainty avoidance and security threats, tourist ethnocentrism, and cultural intelligence on tourists' decisions regarding the selection of foreign destinations.

Figure 1: Research model



Source: Authors' research

3. Materials and methods

The research was completed in late 2024 in the Republic of Serbia using a survey method, with the participation of 608 people (Table 1).

Table 1: Demographic structure of the respondents

		Number	Percentage
Gender	Female	288	47.4%
	Male	320	52.6%
	Total	**608**	**100%**
Age	Up to 19 years	27	4.4%
	20-39 years	241	39.6%
	40-59 years	204	33.6%
	60 years and older	136	22.4%
	Total	**608**	**100%**
Education	Primary education	21	3.5%
	High school	284	46.7%
	University degree	303	49.8%
	Total	**608**	**100%**
Monthly incomes	Up to 90,000 dinars	216	35.5%
	91,000-120,000 dinars	174	28.6%
	121,000 dinars and more	218	35.9%
	Total	**608**	**100%**

Source: Authors' research

Respondents rated the statements related to the variables on a scale from 1 to 7 (Table 2) and SmartPLS 4 software was used for statistical data processing.

Table 2: Variables and statements

Variables	**Statements**	**Source**
Uncertainty avoidance and security threats	1. It is necessary to specify everything precisely and define it clearly. 2. I avoid traveling to countries where there is a threat of terrorist attacks. 3. I do not prefer to travel to countries affected by political instability and social unrest.	Adapted to: Hofstede (2001); Agrawal et al. (2021); Isaac & Velden (2018)
Tourist ethnocentrism	1. I spend my vacation at domestic destinations. 2. Spending money at domestic tourist destinations has a positive impact on the national economy. 3. My country has many beautiful tourist destinations, which I prefer over traveling abroad.	Adapted to: Shimp & Sharma (1987)
Metacognitive factor of cultural intelligence	1. I try to improve my cultural understanding. 2. I am open to accepting ideas that come from other cultures. 3. I have cosmopolitan views and thinking.	Adapted to: Zdravković & Peković (2021)
Cognitive factor of cultural intelligence	1. I know the legal norms of other countries. 2. I know the history of other countries. 3. I speak some foreign languages (English, French, or Italian).	Adapted to: Zdravković & Peković (2021)
Motivational factor of cultural intelligence	1. I am enthusiastic about visiting foreign tourist destinations. 2. I like talking to people from different cultures. 3. I visit museums, operas, and architectural landmarks in other countries.	Adapted to: Zdravković & Peković (2021)
Behavioral factor of cultural intelligence	1. I can adapt to multicultural situations. 2. I can adjust my accent and tone throughout intercultural conversations. 3. I can adjust my body language throughout intercultural conversations.	Adapted to: Zdravković & Peković (2021)
Foreign tourist destinations	1. I love to spend my vacation in a foreign tourist destination. 2. Exploring other cultures is stepping out of the comfort zone and experiencing authentic moments. 3. Money spent on visiting exotic tourist destinations is a good investment.	Adapted to: Coves-Martínez et al. (2022); Jankova et al. (2023); Tang & Zhang (2025)

Source: Authors' research

4. Results and discussion

Table 3 presents the results of the **validity tests**, with parameters indicating the relevance of the research model.

Table 3: Model validity analysis

Indicators of model validity	Research model – Foreign tourist destinations	Desirable value
$\chi 2$/df	1.954	<3
GFI	0.903	>0.9
IFI	0.911	>0.9
TLI	0.921	>0.9
CFI	0.933	>0.9
RMSEA	0.036	<0.08

Source: Authors' research

The assessment of model validity indicates satisfactory fit indices. The χ^2/df value of 1.954 is below the recommended threshold of 3, suggesting good model fit (Bagozzi & Yi, 1998). Other fit measures further support this conclusion, with GFI = 0.903, IFI = 0.911, TLI = 0.921, and CFI = 0.933, all exceeding the accepted cutoff of 0.90 and indicating adequate structural alignment of the model (Byrne, 1998). Moreover, the RMSEA value of 0.036 is well below the threshold of 0.08, confirming excellent model fit with minimal approximation error (Hair et al., 2006). Overall, all indices fall within acceptable statistical limits. **Reliability analysis** was conducted to test whether there is an corresponding level of correlation among the statements used to measure the variables (Table 4).

Table 4: Reliability analysis

Research variables	Cronbach's alpha (desirable value >0.70)	Composite reliability (desirable value >0.70)	Average Variance Extracted (desirable value >0.50)
Uncertainty avoidance and security threats	0.793	0.826	0.657
Tourist ethnocentrism	0.857	0.864	0.635
Metacognitive factor of cultural intelligence	0.868	0.879	0.711
Cognitive factor of cultural intelligence	0.739	0.744	0.659
Motivational factor of cultural intelligence	0.847	0.861	0.698
Behavioral factor of cultural intelligence	0.734	0.828	0.677
Foreign tourist destinations	0.850	0.858	0.735

Source: Authors' research

The assessment of internal consistency and convergent validity confirmed the adequacy of the measurement model. All constructs showed Cronbach's alpha values above the recommended threshold of 0.70 (0.734–0.868), while composite reliability (CR) values also exceeded 0.70, ranging from 0.744 to 0.879. In addition, Average Variance Extracted (AVE) values surpassed the cutoff of 0.50 for all constructs (0.635–0.735), indicating satisfactory convergent validity. Overall, the results demonstrate that the measurement model meets the recommended psychometric standards and is suitable for subsequent structural analysis (Hair et al., 2006).

SEM analysis was applied to analyze the influence of uncertainty avoidance and security threats, tourist ethnocentrism, and cultural intelligence on tourists' decisions regarding the selection of foreign destinations (Table 5).

Table 5: SEM model – dependent variable: *foreign tourist destinations*

Hypothesis	Original sample	Standard deviation	T statistics	P values
Uncertainty avoidance and security threats → Foreign destinations	-0.216	0.084	2.569	0.010**
Tourist ethnocentrism → Foreign destinations	-0.365	0.102	3.577	0.000**
Metacognitive factor of cultural intelligence → Foreign destinations	0.422	0.087	4.823	0.000**
Cognitive factor of cultural intelligence → Foreign destinations	0.194	0.069	2.802	0.005**
Motivational factor of cultural intelligence → Foreign destinations	0.318	0.070	4.518	0.000**
Behavioral factor of cultural intelligence → Foreign destinations	0.480	0.094	5.093	0.000**

Note: **0.01; R square=0.538
Source: Authors' research

R square is 0.538, which indicates that 53.8% of tourists' decisions regarding the visit of a foreign destination are explained by the independent variables. Uncertainty avoidance and security threats (coefficient= -0.216, p =0.010) and tourist ethnocentrism (coefficient= -0.365, p =0.000) have a significate negative impact on the choice of foreign destinations, confirming research hypotheses H1 and H2. Cultural intelligence through metacognitive (coefficient= 0.422, p =0.000), cognitive (coefficient= 0.194, p =0.005), motivational (coefficient= 0.318, p =0.000), and behavioral factors (coefficient= 0.480, p =0.000) has a significant positive impact on the choice of foreign destinations, confirming research hypotheses H3a, H3b, H3c, and H3d.

Bootstrap Multigroup Analysis (MGA) is a nonparametric technique within the PLS-SEM framework used to compare structural relationships across independent respondent groups. Prior studies highlight its relevance for identifying statistically significant differences in path coefficients across demographic segments such as nationality, gender, education, and income (Cheah et al., 2023; Troiville et al., 2025). Accordingly, MGA is widely recommended in socio-economic and marketing research for testing moderating effects of demographic variables and has been successfully applied in tourism-related studies, including analyses of ethnocentrism and xenocentrism among diverse consumer groups (Cucato et al., 2025).

Bootstrap Multigroup Analysis (MGA) was implemented to examine whether there are statistically significant differences in the impact of uncertainty avoidance and security threats, tourist ethnocentrism, and cultural intelligence on the visit of foreign destinations by the respondents based on the demographic characteristic of education. (Table 6).

Table 6: MGA – Education

Relations	**Coefficient (faculty)**	**Coefficient (high school)**	**Difference (absolute)**	**P values**
Uncertainty avoidance and security threats → Foreign destinations	-0.189	-0.334	0.145	0.000**
Tourist ethnocentrism → Foreign destinations	-0.244	-0.412	0.168	0.000**
Metacognitive factor of cultural intelligence → Foreign destinations	0.486	0.311	0.175	0.000**
Cognitive factor of cultural intelligence → Foreign destinations	0.298	0.185	0.113	0.008**
Motivational factor of cultural intelligence → Foreign destinations	0.298	0.265	0.033	0.587
Behavioral factor of cultural intelligence → Foreign destinations	0.517	0.359	0.158	0.000**

Note: **0.01
Source: Authors' research

The negative effects of uncertainty avoidance and security threats (difference = 0.145; p = 0.000) and tourist ethnocentrism (difference = 0.168; p = 0.000) on foreign destination choice are stronger among respondents with a high school education than among those with a faculty education, supporting hypotheses H4a and H4b. In contrast, the positive effects of cultural intelligence – metacognitive (difference = 0.175; p = 0.000), cognitive (difference = 0.113; p = 0.008), and behavioral (difference = 0.158; p = 0.000) – are more pronounced among respondents with a faculty education, confirming hypotheses H4c, H4d, and H4f. The motivational dimension shows no statistically significant difference (difference = 0.033; p = 0.587), leading to the rejection of H4e.

Bootstrap Multigroup Analysis (MGA) was also implemented to determine whether there are statistically significant differences in the impact of uncertainty avoidance and security threats, tourist ethnocentrism, and cultural intelligence on the choice of foreign destinations by the respondents in terms of the criterion demographic characteristic of monthly income. The results are presented in Table 7.

Table 7: MGA- Monthly income

Relations	Coefficient (121 000 dinars and more)	Coefficient (up to 90 000 dinars)	Difference (absolute)	P values
Uncertainty avoidance and security threats → Foreign destinations	-0.177	-0.318	0.141	0.001**
Tourist ethnocentrism → Foreign tourist destinations	-0.214	-0.395	0.181	0.000**
Metacognitive factor of cultural intelligence → Foreign destinations	0.448	0.295	0.153	0.000**
Cognitive factor of cultural intelligence → Foreign destinations	0.311	0.199	0.112	0.007**
Motivational factor of cultural intelligence → Foreign destinations	0.415	0.269	0.146	0.000**
Behavioral factor of cultural intelligence → Foreign destinations	0.505	0.468	0.037	0.497

Note: **0.01
Source: Authors' research

The negative effects of uncertainty avoidance and security threats (difference = 0.141; p = 0.001) and tourist ethnocentrism (difference = 0.181; p = 0.000) on foreign destination choice are stronger among respondents with a monthly income of up to 90,000 dinars than among those earning 121,000 dinars or more, supporting hypotheses H5a and H5b. Conversely, the positive effects of cultural intelligence – metacognitive (difference = 0.153; p = 0.000), cognitive (difference = 0.112; p = 0.007), and motivational (difference = 0.146; p = 0.000) – are more pronounced among higher-income respondents, confirming hypotheses H5c, H5d, and H5e. No statistically significant difference is observed for the behavioral dimension (difference = 0.037; p = 0.497), leading to the rejection of H5f.

Discussion of results

Uncertainty avoidance combined with security threats negatively affects tourists' choice of foreign destinations, while tourist ethnocentrism reinforces preferences for domestic travel, confirming H1 and H2. These findings align with prior research on uncertainty, security risks, and ethnocentrism in tourism (Harrington, 2021; Isaac & Velden, 2018; Kucukkomurler & Ozkan, 2022; Amani, 2024; Bremser & Abraham, 2024; Cucato et al., 2025; Maro et al., 2023; Stepchenkova et al., 2019). In contrast, cultural intelligence positively influences intentions to visit foreign destinations across all its dimensions – metacognitive, cognitive, motivational, and behavioral – confirming H3a, H3b, H3c, and H3d, consistent with earlier studies emphasizing cultural openness and cosmopolitanism (Chatterjee et al., 2022; Coves-Martínez et al., 2022; Mandić et al., 2025; Nazir, 2023).

Regarding demographics, higher levels of uncertainty avoidance and security threats, and tourist ethnocentrism are observed among respondents with lower education and income, supporting H4a, H4b, H5a, and H5b. Conversely, the effects of cultural intelligence are stronger among university-educated respondents through metacognitive, cognitive, and behavioral dimensions (H4c, H4d, H4f), with no significant differences for the motivational dimension (H4e not supported). Similarly, higher-income respondents exhibit stronger effects through metacognitive, cognitive, and motivational dimensions (H5c, H5d, H5e), while no differences are found for the behavioral dimension (H5f not supported). Overall, these results are consistent with previous evidence on demographic differences in tourist decision-making (Cucato et al., 2025; Gedecho et al., 2023; Khan & Jin, 2024; Liao et al., 2025; Zdravković & Peković, 2021).

5. Conclusion

This study examines the effects of uncertainty avoidance and security threats, tourist ethnocentrism, and cultural intelligence on international destination choice in the context of recent geopolitical crises, including the COVID-19 pandemic and the Russia–Ukraine conflict. Grounded in Social Identity Theory and Social Conflict Theory, the findings show that crisis conditions intensify ethnocentric tendencies and risk-averse behavior, thereby constraining foreign travel intentions, while cultural intelligence mitigates these effects by enhancing tourists' ability to manage uncertainty, perceived risk, and cultural distance. **The originality of this research** lies in the development of an integrative conceptual model that jointly incorporates psychological predispositions, macro-level disruptions, and socio-demographic characteristics. Unlike prior studies that examined these factors in isolation, this study explains destination choice as the outcome of their interaction. By conceptualizing cultural intelligence not only as an intercultural competence but also as a resilience-enhancing mechanism, the research extends existing models of tourist behavior and bridges micro-level psychological processes with macro-level crisis contexts. **From a practical perspective**, the findings provide important implications for tourism marketers and policymakers. Risk-reduction strategies – such as targeted communication, real-time safety information, digital reassurance tools, and personalized messaging aligned with tourists' education and income levels – can strengthen confidence in international travel. Emphasizing cultural heritage, historical narratives, architectural landmarks, traditions, and symbolic destination attributes may further enhance destination appeal under heightened uncertainty. **The study is limited** by data collected exclusively in the Republic of Serbia, which restricts generalizability. **Future research** should adopt cross-cultural and longitudinal designs and incorporate additional variables such as cosmopolitanism, xenocentrism, consumer animosity, social media influence, institutional trust, or other Hofstede cultural dimensions to further advance understanding of international destination choice during prolonged crisis conditions.

CRediT author statement

Žaklina Spalević: Conceptualization, Methodology, Formal analysis, Writing – original draft, Writing – review and editing. **Stefan Zdravković:** Data curation, Investigation, Formal analysis, Validation, Writing – original draft, Supervision, Writing – review and editing. **Hristina Milojković:** Project administration, Software, Writing – review and editing.

Declaration of generative AI in the writing process

During the preparation of this work the authors did not use generative AI and AI-assisted technologies in the writing process.

Conflict of interest

The authors declare no conflict of interest concerning this submitted work.

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Impact of the elements of sustainability on consumer value and satisfaction: International tourists' perspective

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Abstract

Purpose – Previous research on sustainability, consumer value, and satisfaction of international tourists has revealed different outcomes and varying relationships. From the perspective of international tourists, the current study investigates the impact of the elements of sustainability on consumer value and satisfaction. **Methodology** – Based on the survey data from international tourists visiting Serbia, Partial Least Square (PLS) method determines relationship between sustainbility dimensions, consumer value and satisfaction. **Findings** – The results confirmed the validity, the dominant role of the economic and environmental elements, the robustness of the proposed models, and the existence of the sustainability – consumer value – satisfaction value chain. **Implications** – The findings contribute to the sustainability literature by highlighting previously overlooked fallouts demonstrating how the components of observed sustainability can be essential in perceived consumer value and satisfaction in an international tourist destination. The study offers a roadmap for further development and planning.

Keywords: destination sustainability, consumer value, satisfaction, international tourists, Partial Least Square (PLS)
JEL classification: Q01, L83, Z32

Uticaj elemenata održivosti na potrošačku vrednost i zadovoljstvo: Perspektiva stranih turista

Sažetak

Svrha – Prethodno istraživanje održivosti, potrošačke vrednosti i zadovoljstva dalo je različito tumačenje kad su u pitanju sastavni elementi i uzajamne povezanosti. Posmatrajući sa stanovišta međunarodnog turizma, ova studija analizira uticaj elemenata održivosti i potrošačke vrednosti kao i odnos između potrošačke vrednosti i zadovoljstva. **Metodologija** – Analizom podataka koji su dobijeni anketiranjem stranih turista u Srbiji, Partial Least Square (PLS) metodom utvrđuje se odnos između dimenzija održivosti, potrošačke vrednosti i zadovoljstva. **Rezultati** – Rezultati potvrđuju validnost, dominantnu ulogu ekonomskog i

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ekološkog faktora, robustan predloženi model i postojanje vrednosnog lanca: održivost – potrošačka vrednost – zadovoljstvo. **Implikacije** – Rad doprinosi literaturi o održivosti u turizmu u otkrivanju prethodno ignorisanih saznanja koja ukazuju na to kako dimenzije održivosti mogu biti ključne u objašnjenju percipirane potrošačke vrednosti i zadovoljstva u turističkoj destinaciji. Rad pruža smernice za dalji razvoj i planiranje.

Ključne reči: održivost destinacije, potrošačka vrednost, zadovoljstvo, inostrani turisti, Partial Least Square (PLS) metod
JEL klasifikacija: Q01, L83, Z32

1. Introduction

The assessment of tourism sustainability (TS) (Cottrell et al., 2013; Iniesta-Bonillo et al., 2016; Kozic & Mikulic, 2014) has received a considerable attention from many authors in modern tourism research (Buckley, 2012; Higgins-Desbiolles, 2018; Tasci, 2018). However, not many studies attempted to validate TS on consumer value and satisfaction in the context of international tourism (Cottrell et al., 2013; Iniesta-Bonillo et al., 2016; Tasci, 2018). The significant reason for this was the lack of empirical data required for the analysis and the lack of empirical studies (Blancas et al., 2010; Ceron & Dubois, 2003). Furthermore, the lack of agreement on universally accepted set of indicators and their conceptualization (Butler, 1999) resulted in the selection of indicators established in the previous research.

The assessment of TS has always been tied to success in economic prosperity, social well-being, and environmental protection (Iniesta-Bonillo et al., 2016). Historically, however, supporting the concurrent growth of economic, social and environmental welfare and its impact on value for money and satisfaction proved to be a challenge for the tourism industry. Consequently, the tourism industry remained dauntingly unsustainable due to limited implementation (Higgins-Desbiolles, 2018). Reason is the abstract nature of TS requiring indirect approach through latent variables. The lack of the universal consensus on the definition of variables and their complexity, the scarcity of empirical literature on the topic, and the best possible conceptualization (Butler, 1999) increases the complexity of the research.

The destination brand context study was conducted in Belgrade, Serbia. Besides being most visited city in Serbia by foreign tourists and a major tourism hub Belgrade is estimated to have the potential of having the strongest general sustainable model, enhanced by consumer value and satisfaction to an extended sustainability model (ESM).

The models applied in the study consider only the perception of international tourists to better capture the particularities of the Serbian international tourism market. The data was collected individually using the Google Forms application by giving interviewers mobile phones with Google Forms application for self-entry. Only international tourists were interviewed between February and March 2021. Constructs satisfaction and value for money were borrowed from Aaker’s (1996) original measures. The study validates both general and extended sustainability models and the impact of the consumer value on satisfaction

The study fills the gap in research literature on how international tourists perceive relationships between the perceived individual elements of destination sustainability: economic, social, environmental, and consumer value and satisfaction. The study expands the tourism destination literature by widening methodological, theoretical, and practical horizons in evaluating international tourists’ perceptual merits. The paper enriches the research literature with a roadmap for assessing how international tourists perceive and impact destination’s sustainability, consumer value, and satisfaction. The paper offers a theoretical model for validating the critical relationships among sustainability components, proposed hypothesis, and the impact of consumer value on satisfaction.

2. Background

2.1. International tourist perception

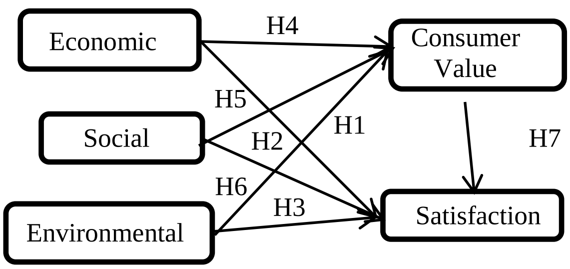
International tourists' experience is critical in understanding the impact of international tourists on destination sustainability. So far, the perceptual studies of international tourists have included destination image, products, attractions, attitude, behaviour, activities, coastal degradation, over-crowding, and qualitative studies (Prayag et al., 2020). However, the interest in how foreign tourists perceive tourist destinations is a recent phenomenon (Iniesta-Bonillo et al., 2016). Moreover, studies concerning international tourists perceptions of common sustainability elements and their relationship with consumer value and satisfaction are scarce (Iniesta-Bonillo et al., 2016; Prayag et al., 2020).

2.2. Perceived sustainability

Higgins-Desbiolles (2018) argues that the term sustainable development is anthropogenic, as it relates to humans only, while ignoring the biodiversity and other species living on the planet. Many researchers advocate that the current tourism industry is not sustainable (Dwyer, 2017; Higgins-Desbiolles, 2018). The lack of agreement on measurement and conceptualization (Prayag et al., 2020) forces authors to adopt a multi-dimensional approach around economic, social, and environmental elements (Cottrell et al., 2013; Iniesta-Bonillo et al., 2016). Iniesta-Bonillo et al. (2016) proposed a paradigm to prove that tourists' understanding of destination sustainability impacts tourists' perceived satisfaction and the consumer value of the trip. Sánchez-Fernández et al. (2018) proposed a formulation of perceived sustainability as the tourists' cognitive-affective evaluation of sustainability policies. Many researchers and international organizations base their sustainability models on the effects of sustainability on consumer value and satisfaction (Iniesta-Bonillo et al., 2016). However, none of the models both perceived tourist satisfaction and consumer value in the international context.

The study examines the relation between economic, social, and environmental constructs with consumer value and satisfaction, see Figure 1. The perceived economic dimension of sustainability refers to the cost of living, demand for public services, infrastructure, wages, indebtedness, and distribution of wealth to local communities. The perceived social dimension of sustainability relates to the conflict and competition for the local resources, services, recreational prospects, space, and facilities, the deterioration of local crafts and skills, the commodification of culture, and the degradation of traditional values, culture, and identity (Briassoulis, 2013; Dwyer, 2017).

Figure 1: Extended sustainability model



Source: Author's research

Finally, the perceived environmental dimension of sustainability considers the adverse effects of growing tourism causing diminishing resources, the deterioration of landscape, the destruction of wildlife habitat, reducing wildlife and biodiversity, altering ecosystems, and increasing carbon footprint (Briassoulis, 2013).

2.3. Perceived satisfaction

Some authors view satisfaction as a cognitive-affective response to a judgment people experience, while the others think of pleasant or disappointed feelings from the outcome of the performance-expectation scenario (Moon et al., 2015). Tasci (2018) states that perceived tourism satisfaction commonly relates to the breadth to which tourists' perceived presumptions are confronted or exceeded. Similarly, Oliver (1997, p. 13) views satisfaction as a completeness reply to the pleasurable or enjoyable experience in the context of over-or under-fulfillment. Tourists are satisfied when their experience with a destination evokes pleasurable and delightful feelings.

This study thus hypothesizes that the elements of sustainability perceived by international tourists influence tourist satisfaction:

H_1: The perceived economic sustainability of international tourists positively impacts the perceived tourists' satisfaction.

H_2: The perceived social sustainability of international tourists positively impacts the perceived tourists' satisfaction.

H_3: The perceived environmental sustainability of international tourists positively impacts the perceived tourists' satisfaction.

2.4. Perceived consumer value

According to Zeithaml (1988) consumer value is a swap between observed costs and benefits. In other words, consumers value a product (service) based on perceptions of what is given and what is received. Prior research shows that perceived price and quality are the significant predictors of perceived value (Duman & Mattila, 2005). In comparison, perceived value is a significant predictor of perceived satisfaction (Cronin et al., 2000; McDougall & Levesque, 2000) and behavioural intentions. Taski (2018) argues that perceived quality and price influence consumer value. Consumer value was one of the most frequently researched constructs in the previous century (Hirschman & Holbrook, 1982; Tasci, 2018; Thaler, 1985; Zeithaml, 1988). While consumer value's relationship with customer-based brand equity is well researched (Aaker, 1996; Boo et al., 2009; Kim & Kim, 2004; Kim & Kim 2005; Konecnik & Gartner, 2007; Tasci, 2018; Yuwo et al., 2013; Zanfardini et al., 2011), interest in the association with the elements of sustainability has only gained momentum in the last decade (Choi & Ng, 2011; Closs et al., 2011; Iniesta-Bonillo et al., 2016). Similarly, Iniesta-Bonillo et al. (2016) and Pulido-Fernández and López-Sánchez (2014) suggest that a tourism destination's perceived sustainability can predict how tourists perceive the value of a tourism destination based on overall experience. The authors argue that the perceptions of value for money and reasonable price, conceptualized as consumer value, respond positively to the sustainability elements, including those related to tourism destinations, see Figure 1. Accordingly, the study hypothesizes that:

H_4: The perceived economic sustainability of international tourists positively impacts the perceived consumer value.

H_5: The perceived social sustainability of international tourists positively impacts the perceived consumer value.

H_6: Theperceived environmental sustainability of international tourists positively impacts the perceived consumer value.

2.5. Perceived consumer value and satisfaction

Several studies use consumer value as a standalone element to articulate that perceived price and quality influence satisfaction (McDougall & Levesque, 2000). The prior scientific literature confirms the impact of consumer's value on satisfaction (Sanchez et al.,2006), see Figure 1, while expanding the results on destinations (Hutchinson et al., 2009; Lee et al., 2007). Accordingly, the study hypothesizes that consumer value influences destination satisfaction. Based on the stated conclusions, the study hypothesizes that:

H_7: The perceived international tourist consumer value is a direct antecedent of perceived satisfaction.

3. Materials and methods

The partial-least square structural equation modelling (PLS-SEM) technique, using SmartPLS 4.0 software, that validates the extended sustainability model (H_1-H_7), see Figure 1, is more appropriate for exploratory research when there is little prior knowledge on data patterns and the smaller sample size (Hair et al., 2017).

3.1. Research instrument

The survey questions support prior literature on the international tourists' perception of tourism destination sustainability, consumer value, and satisfaction (An & Suh, 2019; Boo et al., 2009; Chekalina Fuchs & Lexhagen, 2016; Iniesta-Bonillo et al., 2016; Konecnik & Gartner, 2007; Sánchez-Fernández et al., 2018; Taski, 2018). The questionnaire is amended and pre-tested to ensure data validity and consistency. A comprehensive review of the research literature produced twenty-five (25) observable variables affiliated with five (5) constructs (see Table 2): economic, social, environmental, consumer value, and satisfaction. The economic dimension uses a 5-item scale: consumer prosperity, local and tourist-oriented products, services, markets, and food, adapted from Sánchez-Fernández et al. (2018) and Iniesta-Bonillo et al. (2016). The social dimension uses a 7-item scale: heritage, conservation, friendliness, culture, host population, crowdedness, and safety, adapted from Chekalina et al. (2016) and Sánchez-Fernández et al. (2018). The environmental dimension uses an 8-item scale: ecological damage, smell, noise, environmentally friendly products, waste, environmental awareness, litter, and infrastructure, adapted from Buckley (2012), Iniesta-Bonillo et al. (2016) and Sánchez-Fernández et al. (2018). The consumer value uses a 2-item scale: value for money and reasonable prices, adapted from Chekalina et al. (2016) and Iniesta-Bonillo et al. (2016). Finally, the satisfaction uses a 3-item scale: the quality of services, experience, and superiority, adapted from Aaker (1996), Boo et al. (2009), Kao et al. (2012), Konecnik and Gartner (2007) and Pike (2010).

3.2. Sample design and data collection

A self-completed survey was designed and administrated using the Google Forms smartphone application. The survey gathered empirical statistics from international tourists visiting Belgrade, Serbia's capital, between December 2019 and March 2020 in several locations around the city using face-to-face contacts and screening participants by country of origin. The Google Forms accepted only fully completed surveys, eliminating the missing data issues. The survey, which resulted in 161 voluntary responses, uses a 5-point Likert-type scale from (1) strongly disagree to (5) strongly agree. Based on five latent variables and 25 indicators, Westland's (2010) software approved minimum 129 sample size for SEM analysis , with 0.10 effect size, 0.80 power level, and 0.05 significance level, confirming the adequacy of a sample size of 161 for the SEM analysis. The data is checked for the common method bias in SEM using Harmon's one-factor test (Podsakoff & Organ, 1986). The SPSS analysis using the eigenvalue criteria produced a (5) factor solution explaining 69% of the variance. The first factor explained only 34% of the variance, confirming no common method bias issue. Also, the highest correlation of 0.589 in Table 4 is way below the threshold of 0.9, indicating no inter-correlation issue.

4. Results

4.1. Data features

The demographic analysis shows that out of 161 respondents 53% were females, 45.34% repeated visitors, and are between 20 and 40 years of age, see Table 1. The results show that Serbia is attractive to first-time visitors (54.66%), single (54.66%), entrepreneurs (39.13%), low-income (34.40%), married with children (21.12%), and those likely to travel with friends (35.40%) or partners (32.30%) (see Table 1).

Table 1: Demographics (n=161)

(n=161)		(%)	Freq. (#)	Mean (1 to 5)
Gender (n=161)	Female	53.42	86	3.59
	Male	46.58	75	3.54
First Time (n=161)	Yes	54.66	88	3.47
	No	45.34	73	3.68
Age (n=161)	Under 20	5.59	9	3.46
	20-29	40.99	66	3.60
	30-39	36.02	58	3.59
	40-49	13.66	22	3.41
	50-59	3.73	6	3.61
Annual Income USD (n=161)	Under $10K	35.40	57	3.69
	$10K-$20K	22.98	37	3.60
	$20K-$30K	21.12	34	3.53
	$30K-$40K	8.07	13	3.28
	Over $40K	12.42	20	3.38
Occupation (n=161)	Academic	13.04	21	3.45
	Student	16.15	26	3.58
	NGO	2.48	4	2.96
	Private	39.13	63	3.53
	Public	18.01	29	3.70
	Other	11.18	18	3.73
Marital Status (n=161)	Single	54.66	88	3.59
	Married w/c	21.12	34	3.61
	Married w/o	11.18	18	3.49
	Divorced	3.73	6	3.52
	Other	9.32	15	3.43
Travel With(n=161)	Friend	35.40	57	3.51
	Partner	32.30	52	3.64
	Relative	8.07	13	3.57
	Spouse	7.45	12	3.37
	Alone	13.04	21	3.64
	Other	3.73	6	3.62
By Country(n=161)	Montenegro	8.70	14	4.08
	Greece	8.07	13	3.57
	B&H	8.07	13	3.79
	Slovenia	7.45	12	3.26
	China	7.45	12	3.46

Notes: w/c with children; w/o without children; B&H Bosnia and Herzegovina
Source: Authors' research

Out of 28 countries in the survey, the top 5 countries account for 40% of the respondents, see Table 1. Montenegro is the most represented country in the survey (8.70%), followed by Greece (8.07%), Bosnia & Herzegovina (8.07%), Slovenia (7.45%), and China (7.45%). Traditionally, international tourists come from former Yugoslav republics, followed by Greece, Turkey, Russia, and more recently from China.

4.2. Measurement model

The internal consistency is validated using factor loadings and Composite Reliability (CR), while convergent validity is assessed through Average Variance Extracted (AVE) (Table 2). AVE's square root, presented as diagonal values in Table 3, is higher than its corresponding correlation values (Fornell & Larcker, 1981), confirming discriminant validity. Recently, Fornell and Larcker's (1981) discriminant validity method has caused some scrutiny among researchers who questioned its validity and reliability (Henseler et al., 2015). Consequently, Henseler's et al. (2015) alternative method for evaluating discriminant validity based on the Heterotrait-Monotrait (HTMT) ratio of correlations which tests if the ratios of correlations exceed 0.85 (Kline, 2011). The results presented in Table 4 suggest that all correlations have values under 0.85, thus, confirming the discriminant validity.

Table 2: Validity and reliability

Latent Var	**Observable variables**	**Loadings**	**CR**	**AVE**
Eco			0.869	0.689
	Compared to other countries visited, Serbia offers a variety of local products.	0.812		
	Compared to other countries visited,, Serbia has more markets for local products.	0.844		
	Compared to other countries visited,, Serbia offers various products and services for tourists to buy (souvenirs, food, drink, entertainment, coffee shops, street vendors, etc.).	0.835		
Soc			0.846	0.734
	Compared to other countries visited residents' knowledge about their heritage (culture) is high.	0.813		
	Compared to other countries visited, Serbia shows a strong sense of culture and traditions.	0.899		
Env			0.888	0.799
	Compared to other countries visited, the volume of solid waste in Serbian cities is acceptable.	0.862		
	Compared to other countries visited, Serbia shows a high environmental awareness of residents.	0.925		
CV			0.872	0.773
	Compared to other countries visited, Serbia has reasonable prices.	0.827		
	Compared to other countries visited,, Serbia offers a good value for money.	0.929		
Sat			0.855	0.663
	The quality of services in Serbian tourism is generally high.	0.796		
	Serbia provides high-quality experiences.	0.842		
	Serbia is superior as a tourist destination.	0.803		

Notes: L=Loadings; CR= Composite Reliability; AVE=Average Variance Extracted; Eco=Economy; Soc=Social; Soc=Social.; Env=Environmental; CV=Consumer Value; Sat=Satisfaction.
Source: Authors' research

Table 3: Discriminant validity

Constructs	1	2	3	4	5
Consumer Value	**0.878**				
Economic	0.281	**0.799**			
Environmental	0.208	0.375	**0.769**		
Satisfaction	0.320	0.589	0.443	**0.814**	
Social	0.281	0.377	0.253	0.363	**0.857**

Notes: Off diagonal values are correlations, while diagonal values in bold are the square root of AV
Source: Authors' research

Table 4: Heterotrait-Monotrait Ratio (HTMT)

Constructs	Consumer Value	Economic	Environmental	Satisfaction	Social
Consumer Value					
Economic	0.339				
Environmental	0.238	0.490			
Satisfaction	0.401	0.733	0.490		
Social	0.397	0.451	0.293	0.515	

Source: Authors' research

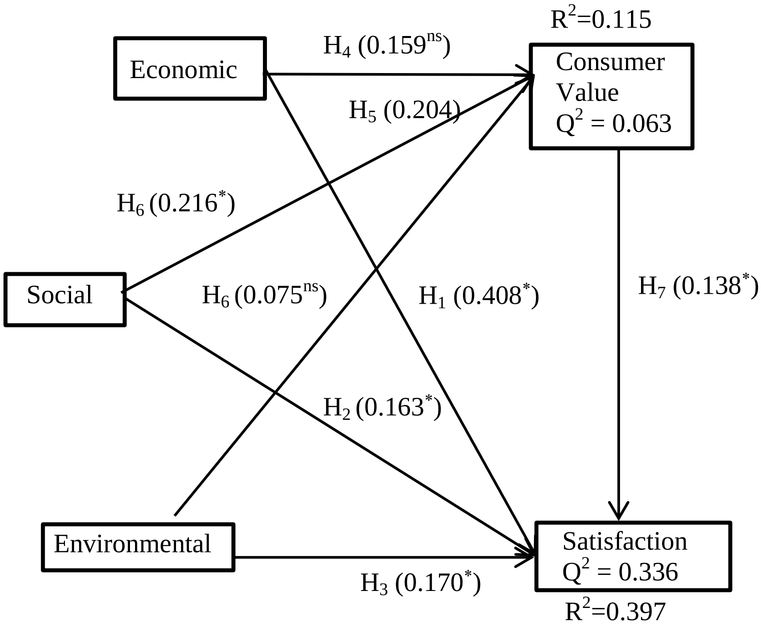
4.3. Structural model

The PLS-SEM method was applied to analyse the hypothesized relationships H_1-H_7, see Figure, 3. The measurement model was first assessed to test validity and reliability, followed by the examination of the structural model (Hair et al., 2017). In the structural model assessment, the first step involved checking for multicollinearity. The results confirmed that this was not a concern, as all inner VIF values were below the recommended threshold of 3.

Bias-corrected bootstrapping method with a 5000-maximum number of iterations shows a non-significant impact of the economic construct on consumer value ($\beta = 0.159$, $t = 1.587$, $p= 0.113$) and of the environmental construct on consumer value ($\beta = 0.075$, $t = 0.829$, $p= 0.407$), rejecting H_4 and H_6..There is a positive and significant impact of the social construct on consumer value ($\beta = 0.216$, $t = 2.125$, $p < 0.05$), confirming H_5. Moreover, there is a positive and significant impact of the economic construct ($\beta = 0.408$, $t = 6.106$, $p < 0.01$), environmental construct ($\beta = 0.170$, $t = 2.498$, $p < 0.05$) and social construct ($\beta = 0.163$, $t = 2.026$, $p < 0.05$) on satisfaction confirming H_1, H_2 and H_3. Finally, positive and significant impact of consumer value on satisfaction ($\beta = 0.138$, $t = 1.969$, $p < 0.05$), confirming H_7. Furthermore, the economic, environmental and social constructs explain 11.5% of the variance in consumer value ($R^2 = 0.115$) and 39.7% of the tourism satisfaction ($R^2 = 0.397$), see Figure 3. According to Hair et al. (2011), the former can be considered weak, whereas the latter indicates a moderate explanatory power.

The model's predicting power Q^2 parameter is tested using the blindfolding procedure (Chin, 1998), where, for predictive relevance, the Q^2 needs to be greater than zero. All endogenous variables, Hair et al. (2017) show satisfactory predictive power, see Figure 3. Cohen (1988) recommended scale for small (0.02), medium (0.15) and large (0.35) effects. The effect size range from small to medium, based on the predictive relevance f2 values shown in Table 5.

Figure 3: Causality model (H_{1-7})



Source: Authors' research

Table 5: Hypotheses testing results

Hypotheses	**Decision**	**Beta**	**T-value**	**f-square**
H1: The perceived economic sustainability of tourists positively impacts perceived satisfaction.	Confirmed	0.408	6.106	0.213
H2: The perceived social sustainability of international tourists positively impacts perceived satisfaction.	Confirmed	0.163	2.026	0.037
H3: The perceived environmental sustainability of international tourists positively impacts perceived satisfaction.	Confirmed	0.170	2.498	0.041
H4: The perceived economic sustainability of international tourists positively impacts the perceived consumer value.	Not Conf.	0.159	1.587	0.023
H5: The perceived social sustainability of international tourists positively impacts the perceived consumer value.	Confirmed	0.216	2.125	0.047
H6: The perceived environmental sustainability of international tourists positively impacts the perceived consumer value.	Not Conf.	0.075	0.829	0.005
H7: The perceived international tourist consumer value is a direct antecedent of perceived satisfaction.	Confirmed	0.138	1.969	0.028

Source: Authors' research

5. Discussion and implications

The study is concerned with relationships between the perceived elements of sustainability (economic, environmental, and social), and perceived consumer value and satisfaction, in the context of international tourist destination. Belgrade, the capital of Serbia, is selected because of the specific international tourism market dominated by tourists from former Yugoslav republics, now independent countries. The research validates that sustainability dimensions are related to perceived satisfaction and consumer value confirming previous research that supports the construct's multidimensionality (Farsari, 2012). Moreover, the research suggests that companies that adopt sustainable development create value for consumers. Even though previous studies have linked perceived sustainability to perceived customer value, this is the first study that links the individual elements of perceived sustainability (economic, social, environmental) to perceived consumer value and satisfaction. The study validates six out of eight hypotheses, see Figure 3, and confirms the dominant role of the social element, as shown in Table 5.

6. Conclusion

The study confirms extended sustainability models. It expands theoretical horizons by confirming the positive impact of economy, environment, and consumer value on satisfaction. Furthermore, it provides a theoretical roadmap on how to significantly increase competitive superiority of a destination as it shows that the satisfaction of foreign tourists in Serbia mostly comes from economic awareness. The study shows that consumer value is influenced by social impact (culture, tradition, heritage, local products, etc.), rather than economic and environmental. Finally, consumer value influence satisfaction. Overall, the findings provide a roadmap for management in tourism organizations for strategic planning and resource utilization.

6.1. Limitations and future research suggestions

The analysis may be biased due to the interpretation of data as the study uses perceptual data from one tourist destination, both first-time and revisiting tourists. By collecting perceptual data on-site and not after the tourists return home, interpretation of the results could also lead to bias. Furthermore, data collected from foreign tourists in Belgrade may not fully reflect the broader perception of Serbia. Also, gender and age analysis may further highlight perceptual differences with implications on satisfaction and consumer value impacting the cross-validation of the model.

Future research on the subject should consider various components and markets by including semantically adapted questions with a more specific context. For example, rather than asking, "Serbia shows," the formulation should change to "residents of Serbia show". Finally, the study provides no information on the impact of demographics (e.g. gender, income, education, etc.) and travel characteristics (e.g., type of transport, period of the year, destinations visited, etc.). Expanding the sample frame scope to different and multiple tourism destinations, adding more variables, such as loyalty, behavioural intentions, image, and socio-cultural and institutional dimensions could improve the results. Finally, although meeting the criteria, it is always advisable to expand the sample size.

CRediT author statement

Milivoj Teodorović: Writing – original draft, Writing – review & editing, Visualization, Software, Methodology, Formal analysis, Conceptualization. **Danijel Pavlović:** Writing – review & editing, Validation, Supervision, Methodology, Investigation, Formal analysis, Conceptualization. **Jovan Popesku**: Writing – review & editing, Validation, Supervision, Methodology, Investigation, Formal analysis, Conceptualization.

Declaration of generative AI in the writing process

During the preparation of this work the authors did not use generative AI and AI-assisted technologies in the writing process.

Conflict of interest

The authors declare no conflict of interest.

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Hotel ESG performance: A new competitive arena

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Abstract

Purpose – The paper aims to highlight the increasing importance of hotel environmental, social, and governance (ESG) performance as a factor of sustainable competitiveness, and to assess convergence, divergence, and trends at the industry level. **Methodology** – A qualitative content analysis was conducted of the most recent ESG, sustainability, or responsible business reports published by eight major global hotel groups. The sample includes both integrated and franchise-heavy business models, allowing an assessment of the influence of ownership structures on ESG implementation. **Findings** – The results indicate that there is a profound change in the global hotel industry, where ESG performance is no longer just a side issue, but a key dimension of competitiveness. All examined hotel companies show strong commitment to ESG practices; however, different approaches are noticeable as well as the impact of ownership structure on the ESG performance. **Implications** – The present work complements the existing and still vague literature on hotel ESG performance by identifying emerging trends in the industry and practices adopted by the global hotel companies. It also reveals possible alternatives to other hotel companies, especially by demonstrating the relation between ownership structure and ESG practices.

Keywords: hotel, ESG, performance, competitiveness, responsibility, sustainability
JEL classification: M14

ESG performanse hotela: Nova konkurentska arena

Sažetak

Svrha – Cilj rada je da istakne rastući značaj ESG performansi hotela kao faktora održive konkurentnosti i da proceni konvergenciju, divergenciju i trendove na nivou industrije. **Metodologija** – Sprovedena je kvalitativna analiza sadržaja najnovijih izveštaja o ESG performansama, održivosti ili odgovornom poslovanju koje je objavilo osam vodećih globalnih hotelskih kompanija. Uzorak obuhvata i integrisane i franšizne poslovne modele, što omogućava procenu uticaja vlasničkih struktura na implementaciju ESG praksi. **Rezultati** – Rezultati ukazuju na značajnu promenu u globalnoj hotelskoj industriji, gde ESG

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performanse više nisu samo sporedno pitanje, već ključna dimenzija konkurentnosti. Sve posmatrane hotelske kompanije pokazuju snažnu posvećenost ESG praksama, međutim, primetni su različiti pristupi, kao i uticaj vlasničke strukture na ESG performanse. **Implikacije** – Ovaj rad dopunjuje postojeću i još uvek nedovoljnu literaturu o ESG performansama hotela identifikovanjem novih trendova u industriji, kao i praksi vodećih globalnih hotelskih kompanija. Takođe, otkriva moguće alternative drugim hotelskim kompanijama, posebno ukazujući na vezu između vlasničke strukture i ESG praksi.

Ključne reči: hotel, ESG, performanse, konkurentnost, odgovornost, održivost
JEL klasifikacija: M14

1. Introduction

Traditionally, quality and price have been the two primary sources of competitive advantage. However, in the context of intense competition within the hotel industry – and the limited potential for further improvements in quality-to-price ratio – an additional source of competitive advantage has emerged. Growing public concern for the environment, employee well-being, and community welfare has prompted hotel companies to differentiate themselves through responsible and sustainable practices. An ecological orientation increasingly appeals to tourists who are environmentally conscious (Pereira-Moliner et al., 2012). Research indicates that many travelers are willing to pay a premium to stay in hotels that operate responsibly (Lee et al., 2010). Ivkov et al. (2024) highlight a significant growth projection in the meetings industry (188% by 2028), noting that 21% of business travelers prioritize environmental sustainability – underscoring the rising demand for eco-friendly business events, many of which are hosted in hotels.

In an era marked by increasing environmental concerns, stakeholders in the hospitality industry, especially younger generations, are placing growing emphasis on the environmental impact of hotel operations. In response, many hotels worldwide are now being designed and operated in harmony with nature. This involves integrating buildings into the natural environment, using sustainable and non-toxic construction materials, treating wastewater, employing renewable energy sources, and implementing effective recycling practices. The overarching goal is to minimize, or ideally eliminate, the hotel's environmental footprint.

Today, hotels are competing not only for customers, but also for employees, investors, and funding by demonstrating their commitment to environmental stewardship, social responsibility, and community engagement. A strong image of environmental and social responsibility enhances stakeholder perceptions, making a hotel more attractive as a place to stay, work, and partner with (Heikkurinen, 2010). Working for a socially responsible employer fosters a sense of pride and stronger emotional attachment. For instance, Damnjanović et al. (2024) report a significant positive relationship between internal social responsibility and employees' affective, continuance, and normative commitment in service-oriented companies. Consequently, the hotel's image improves, along with employee satisfaction and loyalty – an outcome that is typically difficult to achieve in the hospitality industry. Known for its high employee turnover, hospitality often suffers from the loss of accumulated knowledge due to the constant need to recruit and train new staff. This not only results in wasted financial resources but also poses a significant challenge in maintaining consistent service quality. By implementing socially responsible practices, hotels can enhance employee retention, customer loyalty, staff satisfaction, and overall reputation. These benefits can ultimately lead to improved productivity (Choi & Kim, 2024; Kucukusta et al., 2013; Madanaguli et al., 2023; Wong & Lai, 2024). Furthermore, Heyward (2020) highlights that corporate social responsibility (CSR) positively and significantly strengthens connections among staff, customers, and investors.

Beyond guests and employees, investors are increasingly considering this aspect of hotel operations, recognizing its impact on future performance (Akhtar et al., 2023). Responsible business practices not only enhance the hotel's reputation, attract guests, retain employees, and protect the natural environment, but they also lead to substantial cost savings through reduced resource consumption and recycling initiatives. As a result, investors anticipate higher returns from responsible hotels, which boost the market value of these companies.

Hotels typically secure financing from commercial banks as well as national and international funds. With the rising popularity of green financing, hotels that adopt responsible business models and sustainable solutions can access these funds more readily. It is important to note that the cost of debt is generally lower than the cost of equity, making green financing particularly attractive to hotel managers aiming to maximize company value.

The aim of this paper is to highlight the growing significance of environmental, social, and governance (ESG) performance in enhancing overall hotel performance and competitiveness. In addition, this research provides a systematic analysis of ESG reports from eight major global hotel companies. This research addresses a notable gap in the existing literature regarding the key drivers of ESG reports within the hotel industry, the components of ESG-related reports, and the engagement strategies employed by hotel companies. By analyzing these elements, the study aims to deliver a comprehensive understanding of how hotel companies prioritize and implement ESG practices.

The paper is structured as follows: it begins with a literature review, followed by the presentation of materials and methods, then results and discussion, and ends with a conclusion section.

2. Literature review

2.1. ESG reporting in hotel companies

The hospitality and tourism literature places greater emphasis on corporate environmental and social responsibilities than other fields, largely due to these industries' intensive use of natural resources and their inherently wasteful practices (e.g., water, energy, and food consumption, CO_2 emissions, wastewater, and solid waste) (Guzzo et al., 2020). According to Lähteenmäki-Uutela et al. (2024), air-conditioned hotels are among the most harmful contributors to climate change. Given that the hospitality and sustainability sectors are more susceptible to external influences related to climate change and its social and economic impacts, the ESG framework serves as an essential strategy; as a result, it is crucial to include ESG concepts into modern hotels (Bae, 2022). ESG performance, consisting of three pillars of environmental, social, and governance, refers to a company's responsible behavior toward the natural environment and society, and adherence to ethical principles. Environmental component is concerned with resource usage, waste and pollution management, as well as climate change combating; social component deals with the impact of business on employees, customers, and wider community; governance component relates to structures, transparency, policies, and ethical behavior of company employees (Mecca et al., 2023; Moradi et al., 2024; Saputra et al., 2024). The ESG concept offers a thorough framework for assessing and enhancing the environmental, social, and governance performance of a hotel (Abazaj, 2024).

According to ABNT PR 2030 (2022), ESG is defined as "a set of environmental, social and governance criteria to be considered in the assessment of risks, opportunities and their impacts in order to guide activities, businesses and sustainable investments" (p. 14). ESG criteria lead to a reduction in the cost of capital, an increase in market value, and an improvement in the company's image (Ionescu et al., 2019; Kočović et al., 2016; Popović & Paunović, 2018). Following the ESG principles, hotel companies increasingly pay attention to resource efficiency, waste reduction, green purchasing and building design, smart gardens, community and employees' well-being, both guest and employee education, technology usage, measurement, and reporting are some tactics hotels can use to get in line with ESG principles (Mihailović et al., 2023; Miletić et al., 2025). By implementing these strategies, hotels may meet the demands of stakeholders who respect ESG principles, attract eco-aware tourists, and support a more sustainable and responsible tourism industry (Dorfleitner et al., 2020; Huang, 2021; Ionescu et al., 2019; Milovanović et al., 2022; Tóth et al., 2021). Around the world, the idea of sustainable and all-encompassing development has once again become an important topic of discussion. International organizations and nations have suggested sustainable development action plans, like ESG, to establish a long-term and comprehensive framework for human development in recognition of the increasing importance of sustainable development issues in the environment, society, and global economy (Abazaj, 2024; Li et al., 2021). Sustainability reports often include themes such as emissions, resource management, and other environmental issues (Stojić & Pejović, 2025). Grujić et al. (2023) assert that reports from companies about sustainable practices are crucial for all stakeholders, including the wider community.

In recent years, information published on hotel companies' websites devoted to CSR goals and practices has been complemented with ESG reports containing quantitative performance measures, such as the percentage of carbon, water, energy, and waste reduction; the percentage of energy used from renewable sources; the percentage of hotels certified to recognizable sustainability standards; the percentage of eco-friendly products used; the percentage of the workforce by gender, color, generation, ethnicity, and disability; supplier diversity percentages (women-owned, people with disabilities-owned, minority-owned, etc.); the number of teachers trained; the percentage of trained personnel; volunteer hours; the percentage of hotels involved in community service activities; amounts of donations for particular purposes; the sum of money and number of hours devoted to people in crisis; the number of hired refugees; complimentary room nights; and many others. In addition, companies provide year-to-year performance metrics to show progress toward the Sustainable Development Goals (SDGs), and some of them visualize the progress toward the SDGs by 2030.

According to Legendre et al. (2024), ESG reports are published by numerous hospitality and tourism companies in an effort to boost brand values and attract investors, consumers, and employees. Wynn Resorts, American Airlines, and Choice Hotels International are cited by the same authors as examples to illustrate. Academic interest in this field of study has also developed due to the pressure on businesses to prioritize "doing good for society" over making money. Rather than solely managing impacts, ESG business reporting in recent years outlines the specific steps companies have taken to encourage global engagement and identify solutions, as well as how they manage and address ESG issues (Ionescu et al., 2019).

2.2. Impact of ESG performance on business performance of hotel companies

The ESG performance of a business is increasingly crucial in determining its marketability and overall success (Legrand et al., 2022). As companies are expected to operate sustainably and responsibly, the significance of ESG factors continues to grow within the business landscape (Toscano et al., 2022). The European Banking Authority (EBA) defines ESG factors as "environmental, social or governance matters that may have a positive or negative impact on the financial performance or solvency of an entity, sovereign or individual".

Research in the tourism and hotel industry primarily focuses on the benefits of applying ESG principles to enhance market value, operational performance, and marketing potential within the hospitality sector (Ye et al., 2023). However, Lu et al. (2025) highlight a growing research gap concerning the investigation of ESG principles in the hotel industry, despite their increasing significance in the current context.

The academic literature has extensively studied the connection between ESG and performance (Nguyen et al., 2021). Based on previous studies, Behl et al. (2022) emphasize that economic, institutional, and industrial contexts influence the relationship between ESG and financial performance, resulting in different legal frameworks, social structures, and stakeholder expectations. According to Chtourou and Triki (2017), some authors investigate how ESG implementation affects financial performance. In line with their research, these promises are not damaging to the company, even if they fail to contribute to improved financial performance.

The increasing body of research indicates that the long-term advantages of implementing ESG measures outweigh the short-term costs, despite some studies showing that doing so may initially represent a financial burden or operational cost for the organization (e.g. Blasi et al., 2018; Kruger, 2015). ESG, as noted by several authors, aims to enhance financial performance (Chen et al., 2022; Chen & Xie, 2022; Chung et al., 2024; Garrido et al., 2024; Gregory, 2022; Jahns & Toora, 2021; Jones et al., 2014; Lu et al., 2025; Su & Chen, 2020; Ye et al., 2023).

Recent studies consistently demonstrate a positive relationship between ESG practices and financial performance, reinforcing the argument that corporate management should integrate ESG initiatives to gain competitive advantages (Garrido et al., 2024). Chen and Xie (2022) find that companies supported by ESG-conscious investors tend to achieve superior financial results. Similarly, Su and Chen (2020) report that higher ESG scores correlate with improved financial performance in the hospitality industry, signaling strong stakeholder confidence.

Gregory (2022) highlights that companies benefit from ESG investments, particularly in advanced economies, where significant spending on employee conditions enhances the positive impact of ESG on free cash flow. Chen et al. (2022) examine whether hotels with strong ESG commitments exhibited greater financial stability during the pandemic. Their findings reveal that hotels prioritizing environmental sustainability experienced lower financial volatility and more consistent returns on investment.

Jahns and Toora (2021) emphasize that the relationship between ESG ratings and financial performance in hospitality is influenced by factors such as financial distress and strategic shifts. They argue that robust ESG performance can stabilize and improve hotel stock returns, driving sustained financial growth. Reflecting current trends, more companies than ever are enhancing ESG transparency and disclosure to benefit both stakeholders and management decision-making (Chen et al., 2022).

Lu et al. (2025) identify a positive correlation between ESG ratings and corporate financial performance within the global hospitality industry, particularly during the COVID-19 pandemic. This relationship stems from enhanced corporate reputation, reduced risks and information asymmetry, as well as improved operational and financial efficiency. The authors argue that the benefits of strong ESG performance go beyond initial investments, ultimately leading to increased company value.

Similarly, Chung et al. (2024) find that ESG performance – especially the social and environmental components – significantly enhances hotel operational efficiency. These aspects proved particularly impactful during the recent pandemic. Collectively, these findings suggest that hotel companies should consider ESG investment not only as a viable and effective strategy during normal times but also as a crucial crisis management tool to better navigate future unforeseen disruptions. Supporting this view, Chen et al. (2022) demonstrate that hotels with higher ESG ratings are less vulnerable to the adverse effects of COVID-19. Such hotels exhibited greater stock resilience during the crisis and can be viewed as safe-haven assets for investors. A broader analysis of the pandemic's impact on the hotel sector is provided by Milovanović (2021), who notes that the crisis has accelerated the adoption of ESG-related strategies, including supply chain management, technological innovation, and improvements in service quality.

Despite some disagreements, a substantial body of literature supports the beneficial relationship between ESG implementation and business performance, grounded in Stakeholder Theory. Understanding this relationship and the impact of ESG practices on companies is more important than ever, especially given the rising emphasis on sustainability in today's corporate landscape (Garrido et al., 2024).

Research in the tourism and hospitality industry has largely focused on how ESG principles enhance market value, operational performance, and marketing potential for hospitality businesses (Ye et al., 2023). Beyond boosting reputation, retaining customers, and ensuring long-term financial success, hotels that prioritize ESG factors also contribute to a more sustainable and socially responsible environment. Such hotels may gain a competitive edge, as investors, consumers, and other stakeholders increasingly factor ESG performance into their decision-making processes (Carol, 2017; Lambriex & Tetereva, 2022; Saputra et al., 2024). Xue et al. (2024) further argue that companies emphasizing ESG practices can strengthen their market competitiveness, brand image, and long-term stability.

While the initial adoption of ESG practices – such as investments in social programs or environmental technologies – may appear costly for hotels, numerous studies indicate that ESG efforts ultimately lead to positive financial outcomes. By integrating ESG principles, hotels can reduce operational risks, improve efficiency, enhance guest satisfaction, and build stronger stakeholder relationships. Therefore, ESG should be regarded as a proactive strategy that links hotel performance with resilience, sustainability, quality, and market competitiveness.

3. Materials and methods

ESG practices are documented in various reports issued by companies, including ESG reports, sustainability reports, and responsible business reports. To examine how leading hotel companies are addressing ESG issues, a qualitative content analysis is conducted on the latest versions of these reports published by eight major global hotel groups: Marriott International, Hilton Worldwide, InterContinental Hotels Group (IHG), Hyatt Hotels Corporation, Accor, Wyndham Hotels & Resorts, Choice Hotels International, and Radisson Hotel Group (Table 1). These companies are selected based on their global brand recognition, the size of their portfolio, and the availability of comprehensive ESG information as of 2023 or 2024. The analysis focuses on identifying the key ESG practices reported by each company and uses a comparative framework to examine thematic consistency, depth of implementation, and transparency. Reports are reviewed in full, and qualitative data are categorized according to the three ESG pillars to assess convergence, divergence, and trends at an industry level. The sample includes both integrated and franchise-heavy business models, allowing for an assessment of the influence of ownership structures on ESG implementation.

Table 1: Overview of sampled hotel companies and ESG reports

Company	**Notable Brands**	**Headquarters**	**ESG Report Name**
Marriott International	Marriott, JW Marriott, The Ritz-Carlton, Sheraton, Westin	Bethesda, Maryland, USA	2023 SERVE 360 Report – Environmental, Social, and Governance Progress
Hilton Worldwide	Hilton, Waldorf Astoria, Conrad, DoubleTree, Hampton	McLean, Virginia, USA	2023 Travel with Purpose Report
InterContinental Hotels Group	InterContinental, Crowne Plaza, Holiday Inn, Kimpton	Denham, Buckinghamshire, UK	2023 Responsible Business Report
Hyatt Hotels Corporation	Park Hyatt, Grand Hyatt, Hyatt Regency, Andaz	Chicago, Illinois, USA	2023 World of Care Highlights
Accor	Sofitel, Novotel, Pullman, Ibis, Raffles, Fairmont	Issy-les-Moulineaux, France	2024 Integrated Report
Wyndham Hotels & Resorts	Wyndham, Ramada, Days Inn, La Quinta, Super 8	Parsippany, New Jersey, USA	2024 ESG Report
Choice Hotels International	Comfort Inn, Quality Inn, Clarion, Ascend Hotel Collection	Rockville, Maryland, USA	2023 ESG Report
Radisson Hotel Group	Radisson Blu, Park Inn, Radisson RED, Park Plaza	Minneapolis, Minnesota, USA	2023 Responsible Business Report

Source: Authors' research

4. Results and discussion

4.1. Comparative analysis of environmental component of ESG practices

The environmental dimension of ESG is one of the most developed and publicly visible areas of sustainability performance in the hotel sector. An overview of environmental performance of examined hotel companies is provided in Table 2. A distinguishing feature of all eight companies is the adoption of science-based targets for carbon emissions reduction, reflecting alignment with the Science Based Targets initiative (SBTi) and broader global climate goals. Marriott, Hilton, IHG, Hyatt, Accor, and Radisson have all either confirmed or submitted their targets under SBTi, committing to zero emissions by 2050. These companies also report annual reductions in Scope 1 and Scope 2 greenhouse gas (GHG) emissions, although progress varies. For example, Radisson reports a 32% reduction in emissions intensity (2019–2023), while Marriott has achieved a 24.6% reduction since its 2016 baseline. In contrast, Choice and Wyndham, which primarily operate franchise-based portfolios, report more modest reductions: Choice has a 12% cutback, and Wyndham has a 19.6% decrease in GHG intensity since 2019.

Table 2: Comparative environmental practices of sampled hotel companies

Hotel Company	**Net-Zero by 2050**	**Science-Based Targets**	**GHG Reduction Reported**	**Renewable Energy Use**	**Water Conservation**	**Waste Reduction / Food Waste**	**Sustainable Building Certs**	**Supplier ESG Program**
Marriott	√	√	24.60%	2.10%	√	√	650 target	EcoVadis
Hilton	√	√	45%	48 projects	√	√ (Winnow)	88% pipeline	ESG scorecard
IHG	√	√	14%	Several pilots	√	√	Encouraged	Sustainable Procurement
Hyatt	√	√	27%	Active installations	√	√ (Winnow)	190+ certified	ESG standards
Accor	√	√	Target set	63 hotels	√	√	1,200+	EcoVadis
Wyndham	√	×	19.60%	Some solar	√	√	Promoted	Recognition
Choice	√	×	12%	Limited	√	√	Guided	Questionnaire
Radisson	√	√	32%	Active projects	√	√ (Winnow)	560+	EcoVadis

Source: Authors' research

Energy efficiency is becoming a central pillar in the environmental strategies of all companies. This includes the widespread introduction of LED lighting, intelligent thermostats, and highly efficient HVAC systems. Accor and Hyatt stand out for their focus on building-level retrofits, while Hilton and Marriott have invested heavily in energy monitoring platforms and hotel-level action planning toolkits. Wyndham and Choice, due to their decentralized ownership models, focus on providing guidance and recognition programs, such as Wyndham's Green Certification Program and Choice's "Room to be Green" program.

The transition to renewable energy is a shared priority, even if implementation is still uneven. While companies such as Hyatt, Accor, and Hilton report active solar energy projects at several properties, many chains still rely heavily on conventional energy sources. Marriott has set a target of generating 30% of its electricity from renewables by 2025, but has only achieved 2.1% by 2022. In contrast, Accor has integrated renewable energy systems in over 60 hotels and supports regional procurement programs, demonstrating greater operational integration.

Water saving initiatives are also widespread. Most companies are promoting low-flow faucets, smart irrigation, and water recycling systems. IHG and Hyatt continue to adapt their strategies by conducting risk-based assessments and focusing on properties in water-scarce regions. Radisson and Accor are emphasizing systematic audits at the hotel level and implementing technologies to reduce consumption, while Choice and Wyndham offer best practice guidance and voluntary reporting frameworks due to their franchise-heavy structure.

All companies have committed to avoiding single-use plastic and minimizing food waste. Hilton, Hyatt, and Radisson have introduced AI-based food waste tracking systems such as Winnow. Marriott and Accor have also launched cross-brand campaigns to encourage food donation, composting and employee engagement. While all companies aim to reduce landfill waste, Accor and Radisson are additionally integrating circular economy principles into their sourcing and refurbishment strategies.

Certifications for sustainable buildings are an important differentiator. Accor is the leader with almost 1,200 certified hotels, followed by Radisson and Marriott. Hyatt integrates sustainability into its Global Design Standards, while IHG encourages, but does not require, certification of new buildings. Wyndham and Choice support green building practices but rely on franchisee acceptance, reflecting structural limitations in enforcement.

Supplier involvement is another area where there are differences. Accor, Marriott, and Radisson use platforms such as EcoVadis to assess the ESG performance of their suppliers, and several companies have introduced ESG scorecards or sourcing standards. Choice and Wyndham are at an earlier stage of integrating sustainability into supplier management, although both have introduced ESG questionnaires or recognition programs.

In summary, while leading hotel companies agree on the importance of recognizing climate protection and sustainability as strategic imperatives, their ability to implement environmental commitments varies based on their business models, ownership structures, and regional footprints. Integrated chains such as Accor, Marriott, and Hilton demonstrate a higher level of standardization and data transparency, whereas franchises such as Wyndham and Choice tend to rely more on voluntary commitments, policies, and recognition programs. Nonetheless, all eight companies exhibit significant progress and share a common path toward more sustainable operations, indicating an industry-wide shift toward greater environmental responsibility.

4.2. Comparative analysis of social component of ESG practices

The social dimension of ESG reflects how hotel companies support their employees, engage with their communities, and promote equality across the business. Table 3 illustrates the social performance of selected hotel companies. A common theme across all eight hotel groups is a commitment to diversity, equity, and inclusion (DEI). Hilton, Hyatt, and Marriott have set clear leadership goals. Marriott has achieved 47% gender parity in leadership positions, and Hilton reports 72% ethnic diversity in its U.S. workforce. Similarly, IHG has introduced leadership development targets for underrepresented groups, and Hyatt has made measurable progress with its "Change Starts Here" framework. Choice Hotels, which has not been running such initiatives for as long, has introduced specific targets to increase the proportion of underrepresented racial/ethnic groups to 40% by 2027 and supports minority participation in hotels through its Emerging Markets Program. Radisson and Accor have also embedded DEI into broader workforce strategies. Radisson reports 32% female representation at the executive level, and Accor integrates inclusive training through its School for Change platform.

The protection of human rights, particularly in the context of combating human trafficking, is another shared priority. All eight companies require training on modern slavery for employees and partners. Hilton and Hyatt lead the way with near universal compliance at the properties they manage, while Marriott has trained over one million employees worldwide. IHG partners with Polaris and PACT and is the sole hotel sponsor of Polaris' National Survivor Study. Choice and Wyndham participate in industry-wide initiatives such as AHLA's No Room for Trafficking, and Radisson conducts safety certifications as part of the Safehotels program.

The emphasis on community impact and volunteering is present in all companies, though it varies in scope. Hilton reports 377,000 volunteer hours in 2023, while Marriott has contributed over 8.9 million hours since 2016. Radisson has logged 36,700 hours and donated over €1.3 million to charitable causes. Accor stands out with guest-focused initiatives such as Impact Travel and #AccorSolidarityWeek which connect operations with local causes. Hyatt's RiseHY program specifically targets young people in need of opportunity, while Wyndham's Social Responsibility Council encourages decentralized franchisee participation in local projects. Choice's "Room to Give" and "Your Community, Your Choice" programs also promote local philanthropy.

As far as employee development is concerned, all companies attach great importance to further training and career advancement. Marriott and Hilton have each offered over 800,000 development opportunities in 2023 alone, with Hilton aiming for five million by 2030. Hyatt focuses on inclusive career mobility with its INSPIRIT mentoring and RiseHY programs. Radisson reports 1.5 million hours of staff development in 2023, complemented by high engagement metrics. Accor's School for Change initiative offers a hybrid model of sustainability and professional development combined with performance incentives. Wyndham and Choice place particular emphasis on tools and training for franchisees as part of their decentralized structures.

Table 3: Comparative social practices of sampled hotel companies

Hotel Company	DEI Targets/ Progress	Human Rights Training	Community Engagement	Employee Development	Supplier/ Franchisee Diversity
Marriott	47% women execs, 22% PoC in US	1M+ trained on anti-trafficking	8.9M volunteer hours, refugee hiring	9.6k learning coordinators, 90% trained	EcoVadis scorecard for suppliers
Hilton	72% ethnically diverse in US, 24% women leaders	99% managed hotels, 101k hours	377k volunteer hours, $4.4M grants	860k+ learning opportunities	Unlocking Doors for diverse ownership
IHG	Leadership DEI targets	Partnerships with Polaris, PACT	IHG Academy, local partnerships	Leadership & skills training	Sustainable procurement standards
Hyatt	360 women promoted, 10% rise PoC	Mandatory within 90 days	RiseHY youth program, mentoring	INSPIRIT mentoring, RiseHY	34% Black-owned supplier spend
Accor	Training via School for Change	Mandatory human rights e-learning	#AccorSolidarityWeek, impact travel	School for Change training	Co-founder of HARP initiative
Wyndham	Affinity groups, pay equity programs	Training + NGO partnerships (BEST, ECPAT)	Volunteerism via franchise network	Team development support	Recognition program, DEI guidance
Choice	DEB goals, Emerging Markets Program	AHLA advisory member	Room to Give, community grants	Leadership programs, franchise tools	370+ diverse franchisees supported
Radisson	32% women in leadership	Safehotels certification, modern slavery statement	36.7k hours, €1.3M donations, water aid	1.5M training hours, 83% satisfaction	EcoVadis platform used

Source: Authors' research

Supplier and franchisee diversity is another area of differentiation. Hyatt and Accor have established robust supplier diversity targets, while Marriott and Radisson use ESG scorecards and platforms such as EcoVadis to assess suppliers. Choice is distinguished by its long-standing Emerging Markets Program, which has supported more than 370 minority-owned hotels since 2004. Wyndham promotes sourcing diversity through its Supplier Recognition Program but is still in the process of developing more integrated metrics.

In summary, while all eight hotel groups articulate a strong commitment to the social dimensions of ESG, the depth, extent, and implementation mechanisms vary depending on the corporate structure and strategic focus. Integrated ownership models, such as those of Marriott, Hilton, and Accor, facilitate standardization of training, metrics, and reporting, while franchise-heavy models, such as Wyndham and Choice, rely on tools, recognition, and partnerships to influence social outcomes. Nonetheless, these companies' alignment with the core principles of equality, human rights, and community impact reflects an industry-wide shift toward a socially responsible hospitality industry.

4.3. Comparative analysis of governance component of ESG practices

The governance component of ESG reflects how hotel companies balance sustainability with oversight, accountability, and ethical behavior. A summary of the governance performance of selected hotel companies is exhibited in Table 4. All eight companies have clear ESG oversight at the board level, with Marriott, Hilton, and Accor leading the way in terms of dedicated board committees responsible for overseeing ESG strategy. Marriott's Inclusion & Social Impact Committee and Hilton's Corporate Responsibility Committee play a direct role in integrating ESG into risk management and performance evaluation. Accor's long-standing ESG Committee and ESG Steering Committee at the senior management level also underline the company's institutionalized commitment to sustainable corporate governance. Hyatt and IHG also ensure robust oversight through nomination and governance committees, while Wyndham and Choice embed ESG oversight into broader board and audit committee functions. Radisson, although privately owned, aligns its governance with global sustainability frameworks and emphasizes ethical behavior and transparency through dedicated internal structures.

Board diversity and composition are another important area of governance strength. Hilton and Marriott report a board composition of at least 50% women and/or people of color, with IHG led by a female chair. These figures reflect the overall shift in the hospitality industry toward inclusive governance. However, for franchise companies such as Wyndham and Choice, the data on board diversity are less detailed, although both companies support diversity in leadership succession and governance.

The ethics and compliance programs are well-developed in all companies. All eight companies have formalized codes of conduct, anti-corruption policies, and whistleblower systems. Marriott, Hilton, and Accor stand out for their extensive training offerings: Marriott reports nearly one million courses completed in ethics and privacy, whereas Hilton integrates ethics into executive incentive programs. Choice and Wyndham maintain similarly structured frameworks, including anonymous reporting centers and annual policy certifications. Radisson integrates its ethics charter into supplier relationships and audits, aligning with the principles of the UN Global Compact.

A common feature of the governance strategy is the integration of risk management with ESG monitoring. Hilton, IHG, and Hyatt link ESG to corporate risk through regular reviews at the board level. Both Choice and Wyndham have identified ESG as a "top risk issue" in 2023, which has led to structured engagement of audit and governance committees. Hyatt's Climate Risk Council and IHG's Responsible Business Committee provide additional safeguards. These practices reflect investors' growing expectation that climate and sustainability risks are treated with the same rigor as financial risks.

Transparency and stakeholder engagement are areas of both convergence and divergence. Accor and Radisson openly align themselves with the UN Global Compact and report on frameworks such as GRI and CDP. Marriott and Hilton regularly carry out ESG materiality analyzes and publish performance-related remuneration systems. Wyndham and Choice engage their shareholders, with Wyndham reporting that 59% of its outstanding shares are affected. However, companies with larger owned and managed portfolios, such as Accor, Hilton, and Marriott, can more easily enforce consistent governance implementation than franchises, which must rely on guidelines, incentives, and audits.

Table 4: Comparative governance practices of sampled hotel companies

Hotel Company	**Board ESG Oversight**	**Board Diversity**	**Ethics & Compliance**	**Risk Management**	**Stakeholder Engagement**
Marriott	ISIC committee + CEO council	62% diverse (gender/PoC)	Code of Conduct, 950k+ ethics trainings	Risk & Audit committees monitor ESG	Materiality assessments, investor dialogue
Hilton	Corporate Responsibility Committee	50% women, 25% ethnically diverse	Global ethics hotline, mandatory training	Quarterly board risk reviews	Investor/stakeholder ESG reporting
IHG	Responsible Business Committee	46% women; female Chair	Anti-bribery training, third-party hotline	ESG tied to enterprise risk strategy	Ongoing stakeholder consultation
Hyatt	Board & World of Care Committee	Board gender and ethnic metrics disclosed	Annual training, privacy/data governance	Climate Risk Council & Audit Committee	Quarterly ESG reporting to board
Accor	ESG Committee + Executive ESG Steering	Board diversity in ESG reports	Whistleblower policy, Ethics Committee	Board risk reviews + steering committee	UNGC, GRI, multi-stakeholder input
Wyndham	Corporate Governance Committee	Independent Chair + diverse committees	Code of Conduct, hotline, compliance audits	Risk audits include ESG topics	59% shareholder engagement in 2023
Choice	Audit & Governance Committees	Board diversity policy noted	Hotline, anti-corruption policy	ESG identified as top business risk	Engagement via governance committees
Radisson	Governance Committee	Leadership diversity reflected	Ethics charter, supplier code, reporting	Governance tracks ethics & ESG risk	UNGC, GRI, external partnerships

Source: Authors' research

In summary, while all eight hotel companies have formalized governance mechanisms in place to address ESG risks and responsibilities, the scope, specificity, and enforcement mechanisms vary significantly. Companies with larger, directly managed asset portfolios exhibit a more coherent integration of governance, while franchise models face structural challenges in implementation despite strong policy frameworks. Nonetheless, efforts by individual companies indicate an industry-wide shift toward integrating ESG into corporate governance as a strategic imperative, which is indicative of the maturity of the hospitality industry's response to global sustainability expectations.

5. Conclusion

Building on the separate analyzes of ESG practices, this study summarizes the overarching trends and highlights the broader implications of ESG integration in the hotel industry. It examines how leading hotel companies are integrating ESG into their strategic and operational frameworks and assesses the maturity and consistency of their sustainability efforts across the three pillars.

From an environmental perspective, most companies have set ambitious targets for emissions reduction, with some aligning themselves with science-based targets and net zero commitments. Marriott, Hilton, and Accor stand out for integrating sustainability into both the supply chain and hotel operations, while companies such as Choice and Wyndham, which are more dependent on franchising, face particular challenges in implementation. In the social dimension, all eight companies have taken measurable steps to improve diversity, equity, and inclusion (DEI), employee training and community engagement. However, the degree of transparency and depth varies considerably. Regarding corporate governance, there is strong convergence in terms of ESG oversight at the board level, ethical compliance mechanisms, and the integration of risk management, particularly among the largest hotel operators. Table 5 presents a summary of the findings from this research, concluding that ownership structure significantly influences the implementation of ESG practices within the hotel industry.

Table 5: A summary of the findings

ESG pillar	**Drivers in the hotel industry**	**Ownership structure**	
		Integrated chain hotels	**Franchising hotels**
Environmental	Business models and regional footprints	Higher level of standardization and data transparency	Voluntary commitments, policies, and recognition programs
Social	Corporate structure and strategic focus	Standardization of training, metrics, and reporting	Tools, recognition, and partnerships to influence social outcomes
Governance	Size and management style	Coherent integration of governance	Policy frameworks issued by franchisor

Source: Authors' research

Furthermore, several integrated trends can be identified. First, board accountability for ESG has become the industry norm, with most companies reporting quarterly to board committees or boards on ESG performance. Second, franchise-heavy models face structural barriers to consistent ESG implementation, often relying on guidance and incentives rather than operational oversight. Third, climate targets are converging, with an increasing focus on carbon neutrality, energy efficiency, and water management, supported by external validation by SBTi or GRI. Fourth, there is a clear movement towards stakeholder-centric governance, with an increasing focus on transparency, human rights, and social impact reporting.

These developments signal a profound change in the global hotel industry, where ESG performance is no longer just a side issue but a key dimension of competitiveness. Hotel companies are increasingly being judged not only on their financial returns but also on their ability to meet stakeholder expectations, respond to regulatory change, and contribute to wider sustainability goals. For investors, guests, and regulators alike, ESG performance is becoming a key indicator of resilience and long-term value creation.

Future research could extend this work by examining the relationship between ESG maturity and financial performance in a broader sample of hotel operators or by assessing how third-party ESG ratings compare with internal disclosures. In addition, further qualitative insights could be gained by examining the challenges of implementation at the property level, particularly in franchise-dominated models.

CRediT author statement

Vesna Milovanović: Writing – original draft, Project administration, Investigation, Conceptualization. **Mihailo Paunović:** Writing – original draft, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Suzana Lazović:** Writing – original draft, Investigation. **Amir Moradi:** Writing – review & editing.

Declaration of generative AI in the writing process

During the preparation of this work the authors used ChatGPT 4.0 for extracting, sorting, and summarizing the data from hotel companies' ESG, sustainability, and responsible business reports. After using this tool/service, the authors reviewed and edited the content as needed and take full responsibility for the content of the published article.

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Conflict of interest

The authors declare no conflict of interest.

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A model for preparing manuscripts for submission to the journal Hotel and Tourism Management

Title of the paper in English

Name Surname[1*], Name Surname[2], Name Surname[3]

[1] Institution
[2] Institution
[3] Institution

Abstract

This document presents a model for preparing the camera-ready manuscripts to be submitted for publishing in the journal Hotel and Tourism Management. The abstract briefly summarizes the article, at the same time enabling a reader to assess its relevance. All submissions **must** include a **structured abstract**. These four sub-headings and their accompanying explanations must be included: **Purpose** – This is where you explain 'why' you undertook this study and what is the main goal of the research. **Methodology** – This is 'how' you did it. **Findings** – Here you can explain 'what' you found during your study. **Implications** – Here you explain what are the implications of the study to theory and practice.

The abstract in English should be between **150 and 200** words long.

Keywords: 4-6 keywords
JEL classification: 10pt (http://www.aeaweb.org/jel/jel_class_system.php)

Naslov rada na srpskom jeziku

Sažetak

Ovaj dokument predstavlja obrazac za formatiranje radova tako da izgledaju kao da su već spremni za štampu. Sažetak predstavlja kratak informativni prikaz sadržaja članka koji čitaocu treba da omogući brzu i tačnu ocenu njegove relevantnosti. Radovi **moraju** da sadrže **strukturirani sažetak**. Naredna četiri podnaslova i njihova prateća objašnjenja moraju biti uključeni: **Svrha** – Ovde objašnjavate „zašto" ste sproveli istraživanje i koji je glavni cilj rada. **Metodologija** – Ovde objašnjavate kako ste to uradili. **Rezultati** – Ovde možete objasniti „šta" ste otkrili tokom istraživanja. **Implikacije** – Ovde objašnjavate koje su implikacije studije na teoriju i praksu.

Sažetak na engleskom jeziku treba da sadrži od **150 do 200** reči.

Ključne reči: 4-6 ključnih reči
JEL klasifikacija: 10pt (http://www.aeaweb.org/jel/jel_class_system.php)

* Corresponding author: e-mail address

1. Introduction

Papers should be written **in English** using Microsoft Word for Windows. The paper should be between **10** and **15** full pages long including the figures, tables, references list and appendices. The page should be formatted as **B5 (JIS)**. Allow **20mm** for the bottom and top margins and **25mm** for the left and right margins on a page. The line spacing within a paragraph is single whereas the spacing between two paragraphs is **6pt**. The text should be written using **Times New Roman** font. The maximum number of authors per paper is **three**, however, the Editor-in-Chief has an exclusive right to approve the submissions with four authors per paper in exceptional situations.

2. Background

The title page should contain the Title of paper in English (14pt). Names of authors, institutional affiliation and e-mail addresses should be typed as shown at the previous page. After the affiliation of the last author, leave an empty row followed by an abstract (10pt). Keywords should follow the abstract. Below the keywords, the title of paper and the abstract are to be given in Serbian.

For numbered first-level subtitles use a bold font of 12pt whereas a bold font of 10pt is used for second-level subtitles. The text and the references list should be written using the font size 10pt.

Author(s) is(are) encouraged to propose the **hypotheses** or **research questions** in the line with the aim and type of conducted research.

3. Materials and methods

Materials and methods section should provide a reader with sufficient details and argue all the necessary aspects in order to allow other researchers to replicate the research and build the published results.

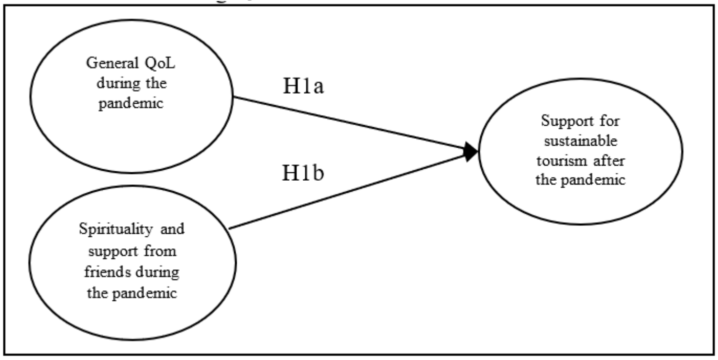
4. Results and discussion

The results obtained in the research should be described in this section. The discussion should highlight the main findings.

Figures, tables and equations

All illustrations whether diagrams, photographs or charts are referred to as Figures. The name and number of figures should be centered on the line above a figure.

Figure 1: Research model



Source: Authors' research

The equations are written using Microsoft Word (MathType); they are consecutively numbered and centered.

$$\mathrm{PVo} = \frac{\mathrm{FVn}}{(1+\mathrm{i})^{\mathrm{n}}} \tag{1}$$

The name and number of tables should be centered above the table.

Table 1: Results of multiple regression analysis

Variable	ß	T	Sig.	VIF
Textual comments	0.609	14.071	0.000*	1.000
Photos	0.484	11.172	0.000*	1.000
Rating	0.152	3.513	0.001*	1.000

* The value is significant at the level equaling 0.05
Source: Authors' research

If the study findings were presented graphically or in a table, author(s) is(are) encouraged to state the source below the figure or table in the following form: **Author's research** (single-authored paper) or **Authors' research** (co-authored paper).

5. Conclusion

The conclusion summarizes the results achieved during the research, along with the **limitations of the conducted research** and **future research recommendations**.

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One-author paper published in a journal
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