

SEGMENTATION OF YOUNG ADULT TOURISTS VISITING CROATIAN CITIES: A HUNGARIAN CASE STUDY

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Abstract: Croatia's allure as a cultural, natural, and historical destination in the global tourism landscape has garnered increasing interest from international travelers, including Hungarian tourists. This study addresses the research gap in demographic segmentation and destination preference among Hungarian adults aged 18-34, a crucial yet understudied market segment within Croatian tourism. Our analysis integrates descriptive statistics and ordinal regression to assess how tourism preferences influence satisfaction. A two-step clustering method identifies demographic clusters, further analyzed to determine their visitation patterns to 11 Croatian cities, revealing significant travel behaviour insights. The findings reveal distinctive clusters with varied travel behaviours and preferences, indicating that tailored marketing strategies could significantly enhance the tourism experience. The travel patterns suggest a move towards personalized travel experiences and an inclination towards autonomy and comfort in accommodation choices. The study enriches the discourse in tourism segmentation and destination analysis, suggesting that understanding the intricate preferences of demographic segments can lead to more effective marketing approaches. Practically, it offers actionable insights for tourism operators, marketers, and policymakers to fine-tune their strategies to cater to this demographic, potentially leading to increased visitation and deeper engagement with Croatian tourism offerings.

Keywords: segmentation, destination, young adults, Hungarian tourists, Croatia

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INTRODUCTION

In the intricate tapestry of the global tourism industry, Croatia emerges as a vibrant mosaic of cultural heritage, natural beauty, and historical significance (Telbisz et al., 2022). Its enchanting coastline, rich historical narratives, and picturesque landscapes have increasingly made Croatia a focal point for international tourists, thereby establishing the tourism sector as a cornerstone of Croatia's economy. It substantially contributes to its Gross Domestic Product (GDP) and employment, underscoring the sector's integral role in the nation's economic landscape.

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Amidst this backdrop, the understanding of tourist preferences and satisfaction levels assumes paramount importance. Tourist preferences, ranging from the pursuit of relaxation and culinary experiences to the desire for exploration and social interactions, significantly influence their satisfaction levels and the overall tourism experience. These preferences, when effectively catered to, can enhance the appeal of a destination and foster higher levels of tourist satisfaction, which in turn could lead to increased recommendations and repeat visits. Thus, exploring the alignment between what tourists seek and how destinations meet these expectations is critical in shaping successful tourism strategies. The dynamic nature of the tourism industry necessitates a continuous examination of emerging trends and changing preferences (Bednářová et al., 2018; Ge and Chen, 2024). As travellers increasingly seek personalized and authentic experiences, destinations must adapt their offerings to stay competitive. In this context, Croatia's ability to diversify its tourism products and cater to niche markets becomes a vital component of its strategic development. The choice of Zagreb, Rijeka, Pula, Porec, Rovinj, Zadar, Sibenik, Korcula, Trogir, Makarska, and Vodice for closer examination in this study was guided by their diverse tourism offerings and distinct regional characteristics. These cities represent a broad spectrum of what Croatia has to offer in terms of cultural heritage, natural beauty, and tourist amenities. By analysing these varied destinations, the study aims to capture a comprehensive understanding of tourist preferences across different types of environments, from urban centres to coastal resorts. This breadth of analysis assists in identifying patterns and trends that may be specific to certain types of destinations or more universally applicable, thereby providing nuanced insights into the segmentation and targeting of different tourist groups.

Demographic segmentation, far from being a mere analytical formality, emerges as a strategic imperative for an industry that thrives on personalization and precision marketing (Irimias et al., 2017; Mangwane et al., 2019; Srncic et al., 2016). By dissecting the market into coherent demographic segments, stakeholders can tailor their offerings to meet the distinct preferences, behaviours, and expectations of each group. In Croatia, where tourism is a pivotal economic force, such segmentation enables the development of more effective marketing strategies (Vodeb and Nemeč Rudež, 2017), potentially enhancing visitor experiences (Akay, 2020) and yielding increased economic benefits. The link between Hungary and Croatia in tourism is underpinned by various factors, including ease of accessibility and a mutual appreciation of cultural and natural offerings (Gerdesics et al., 2014). Hungarian tourists, diverse in their demographics and travel preferences, find Croatia's varied touristic portfolio appealing. Yet, the academic exploration of Hungarian tourists visiting Croatia, especially among young adults, remains limited. This demographic, characterized by potential spending power and a propensity for travel, plays a crucial role in influencing tourism trends. Understanding their preferences is essential for directing marketing strategies and economic policies to effectively harness their contributions. Furthermore, exploring the specific needs and behaviours of young Hungarian tourists can provide valuable insights into the broader European tourism market. As young adults often set trends that influence other age groups, their preferences can indicate future shifts in tourism demand (Streit, 2014; Eusébio and João, 2015). This study, therefore, not only contributes to the understanding of Croatian tourism but also offers implications for regional tourism dynamics in Europe.

Addressing this gap, this study embarks on a comprehensive examination of tourism preferences and satisfaction levels among young Hungarian adults visiting Croatia. It utilizes a demography-based segmentation to analyse diverse travel behaviours and preferences, followed by a destination preference analysis that maps each identified segment's inclination towards various Croatian cities (Demonja, 2013). Subsequently, it investigates how tourism behaviour variables serve as predictors of satisfaction variables, offering insights into the relationship between tourists' preferences and their satisfaction levels across different aspects of the tourism experience. This analysis is further enriched by examining the predictive power of demographic clusters, uncovering how distinct groupings based on demographic characteristics can significantly forecast tourism preferences and satisfaction levels (Hui et al., 2007).

In an era marked by rapid changes in traveller preferences and behaviours, partly accelerated by global challenges such as pandemics and economic fluctuations, this research is particularly pertinent. It highlights the critical need for understanding how different demographic segments respond to changes in the tourism landscape and their preferences for specific destinations. By elucidating these dynamics, the study aims to equip stakeholders with the knowledge to enhance the tourism experience, ultimately contributing to Croatia's sustainable growth and success in the competitive global tourism market. This study also highlights the importance of continuous market research in the tourism industry. As market dynamics and tourist behaviours evolve, regular updates to demographic data and preference analyses become crucial in maintaining the relevance and effectiveness of tourism strategies. By focusing on young Hungarian tourists, the research provides a snapshot of current trends that can influence future marketing and strategic decisions within Croatia's tourism sector.

LITERATURE REVIEW

The literature review discusses the multifaceted significance of tourism in Croatia and Hungary, highlighting its pivotal role as a catalyst for economic growth and acknowledging the challenges accompanying its expansion.

1. Significance of Tourism in Croatia and Hungary

Tourism's economic vitality is prominently showcased within Croatia's borders, where its substantial contribution to the nation's GDP underscores the sector's economic importance (Zemla et al., 2019; Vukonić, 2014). A parallel narrative unfolds in Hungary, where tourism emerges as a dynamic engine of economic development, as articulated by Matzana et al. (2022), affirming the tourism-led growth hypothesis. This shared economic trajectory between Croatia and Hungary underscores the imperative to delve into their interlinked tourism dynamics. Amidst these economic accolades, the necessity to recognize and mitigate the potential adverse impacts of tourism promotes a sustainable approach to its development and management (Mandić and Petrić, 2021; Recher and Rubil, 2020).

2. Outbound Tourism in Hungary

The year 2022 marked a notable rise in international departures from Hungary, underscoring the country's significant role in the regional tourism landscape, with a pronounced preference for European destinations (Statiszta, 2022; Widawski and Wyrzykowski, 2017). The enduring significance of outbound tourism to Croatia is further accentuated by Croatia's EU accession, enhancing the travel flow between the two countries (Čelan, 2016; Veszelka, 2002). The record-breaking visitor statistics from Hungary to Croatia in 2023 not only highlight a burgeoning travel trend but also spotlight Croatia's allure to Hungarian tourists (Ksh, 2019).

3. Segmentation in Tourism

The strategic imperatives of segmentation in tourism marketing, emphasized by Boksberger and Von Bartenwerffer (2003), Pulido-Fernández and Sánchez-Rivero (2010), Mordekhai and Cownie (2020), and Jelinčić et al. (2017), Cast Light On The Significance Of Detailed Market Segmentation In Refining Destination choices and enhancing city branding efforts. The adoption of segmentation strategies, as evidenced by the works of Bigné et al. (2008), Becken et al. (2003), Hernández et al. (2018), Dolnicar (2002), and Hajibaba et al. (2020), reflects the industry's shift towards more nuanced and targeted marketing approaches. Yet, there remains a distinct gap in demographic and travel preference-based segmentation research, particularly among young adult tourists and, more specifically, Hungarian tourists visiting Croatia (Brochado et al., 2022; Birdir, 2015; Shi et al., 2018; Kastenholz et al., 2005; Veisten et al., 2015; Bicikova, 2014; Boukas, 2014; Smith et al., 2023).

4. Tourist Satisfaction Levels

The exploration of tourist satisfaction levels is a vital component in understanding the full spectrum of tourism's impact (Bloom, 2004; Al-Rousan et al., 2019). Satisfaction, as a key determinant of destination loyalty and positive word-of-mouth, has been extensively studied within various contexts including Croatia (Pandža Bajcs, 2015; Radovic et al., 2021). However, the specific factors contributing to satisfaction among tourists, particularly those from Hungary visiting Croatia, remain less explored. Despite the wealth of studies on market segmentation (Masiero and Nicolau, 2012) and satisfaction, there remains an evident gap in demographics-based segmentation (Brochado and Cristovao Verissimo, 2022), especially among young Hungarian adults visiting Croatian cities, and their corresponding satisfaction levels. This gap presents a unique opportunity for this study to contribute valuable insights for destination marketing, city branding, and the strategic development of tourism in Croatia and Hungary (Pinke-Sziva et al., 2020, Gerdesics, 2017).

MATERIALS AND METHODS

Figure 1 presents the research process from the literature review to establishing managerial implications.

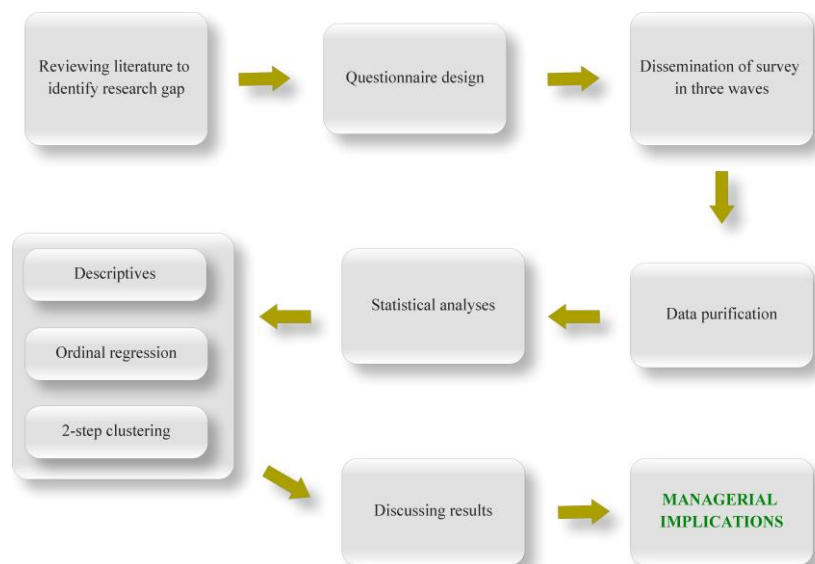


Figure 1. The research process

1. Data Collection

The study utilized a convenience sample focusing exclusively on young adults aged 18-34. An online survey was disseminated through community websites, social media platforms, and university mailing lists to reach a broad audience. The survey targeted individuals who have visited Croatia in recent years, ensuring relevance to the study objectives. The survey page mandated informed consent from participants, adhering strictly to GDPR regulations, including data anonymization and secure storage protocols. The survey included a variety of questions designed to capture demographic information, travel behaviors, preferences, and satisfaction levels.

The data collection period lasted for three months, during which reminders were sent periodically to increase the response rate. Of the 578 received questionnaires, 516 responses were retained for statistical analysis. The remaining responses were excluded due to excessive missing data, defined as having more than 20% of unanswered questions.

2. Sample

The sample of young adults in this study consists of 516 individuals, with a slightly higher representation of females (58.4%) compared to males (41.6%). More than half of the participants (53.9%) reside in Budapest, while others live in various locations, including other cities (29.2%), small settlements, towns, and county seats. The educational background of the sample shows that the majority (72.9%) have completed high school, with 19.5% holding a college or university degree. Only a small portion of the participants have primary school education, vocational training, or a doctoral degree. Most participants (94.3%) do not have children. Among those who do, the majority have one child, with very few having two or more children. The household income distribution indicates a wide range of financial situations, with about a quarter of the participants (24.1%) earning between 201,000-250,000 forints per capita, and significant numbers in higher and lower income brackets. This diverse demographic profile offers a comprehensive understanding of the young adult population, encompassing various aspects of their lives and economic statuses, which can help tailor services and policies to better meet their needs and preferences.

3. Statistical Analysis

Statistical analyses were conducted using SPSS Version 28. Descriptive statistics were first calculated to summarize the demographic characteristics and travel behaviors of the sample.

For analyzing tourism preference and satisfaction variables, mean values and standard deviations were computed to understand the central tendencies and dispersion. To explore the relationships between tourism behaviors and satisfaction, ordinal regression was used. This method was chosen due to the ordinal nature of the satisfaction ratings, which allowed for the examination of whether certain tourism behavior variables significantly predict satisfaction levels. Clustering analysis was employed to identify distinct groups within the sample based on demographic characteristics. A two-step clustering analysis was performed, which is suitable for large datasets and can handle both continuous and categorical variables. The clustering process involved gender, net monthly income, and number of children as input variables, resulting in the identification of distinct demographic clusters within the sample. Subsequently, an ordinal regression analysis was conducted to assess the relationship between cluster membership and the frequency of visits to 11 Croatian cities.

The cities were treated as ordinal dependent variables, and the regression analysis aimed to determine if certain clusters visited any of the cities significantly more frequently than others. This step was crucial to understand the travel patterns of different demographic groups and their preferences for specific destinations within Croatia. Additionally, validation tests such as cross-validation and internal consistency checks were performed to ensure the reliability and robustness of the clustering and regression models. These analyses provided insights into the demographic influences on travel behaviors and preferences, offering valuable information for targeted marketing and service development in the tourism industry.

RESULTS AND DISCUSSION

1. Tourism preferences and satisfaction levels

1.1. Descriptive statistics

Figures 2 and 3 show mean values for Preferences and Satisfaction levels. Respondents rated these variables on a 4-point scale (1=Not at all, 4=Very much).

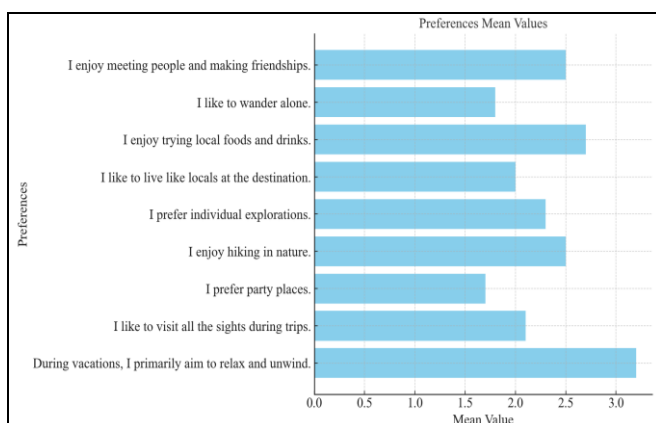


Figure 2. Mean values of travel preferences



Figure 3. Mean values of satisfaction levels

Figure 4 shows basic statistics for the Travel Preferences variables providing a visual summary of the interquartile range (IQR) where the middle 50% of the data lies, with the horizontal line inside the box indicating the median (second quartile) rating. The whiskers extend to the minimum and maximum values within 1.5 times the IQR from the first and third quartiles, respectively. Outliers, if any, are shown as individual points beyond the whiskers. Respondents display a significant inclination towards relaxation and unwinding during vacations, with a mean value of 3.57, indicating a strong preference for activities that facilitate a break from their routine. Similarly, the enjoyment of local foods and drinks emerges as a key aspect with a high mean value of 3.45, underscoring the importance of culinary experiences in enhancing the overall satisfaction of tourists. Contrarily, preferences for solitary wanderings and party places are less favoured, with

mean values of 1.9 and 2.38 respectively, suggesting that while tourists seek engaging experiences, there is a lesser inclination towards extreme solitude or party-centric destinations. The preference for sightseeing and making new friendships, with mean values of 2.92 and 2.82 respectively, alongside a moderate interest in hiking in nature, indicate a balanced desire for exploration and social interaction, albeit less pronounced than the pursuit of relaxation and culinary experiences. This is complemented by a moderate enthusiasm for living like locals, individual explorations, and preference for specific activities like enjoying local sports facilities, which receive mean values around the mid-2s range, suggesting an average interest in immersive and adventure-based activities. Figure 5 shows basic statistics for Satisfaction Levels.

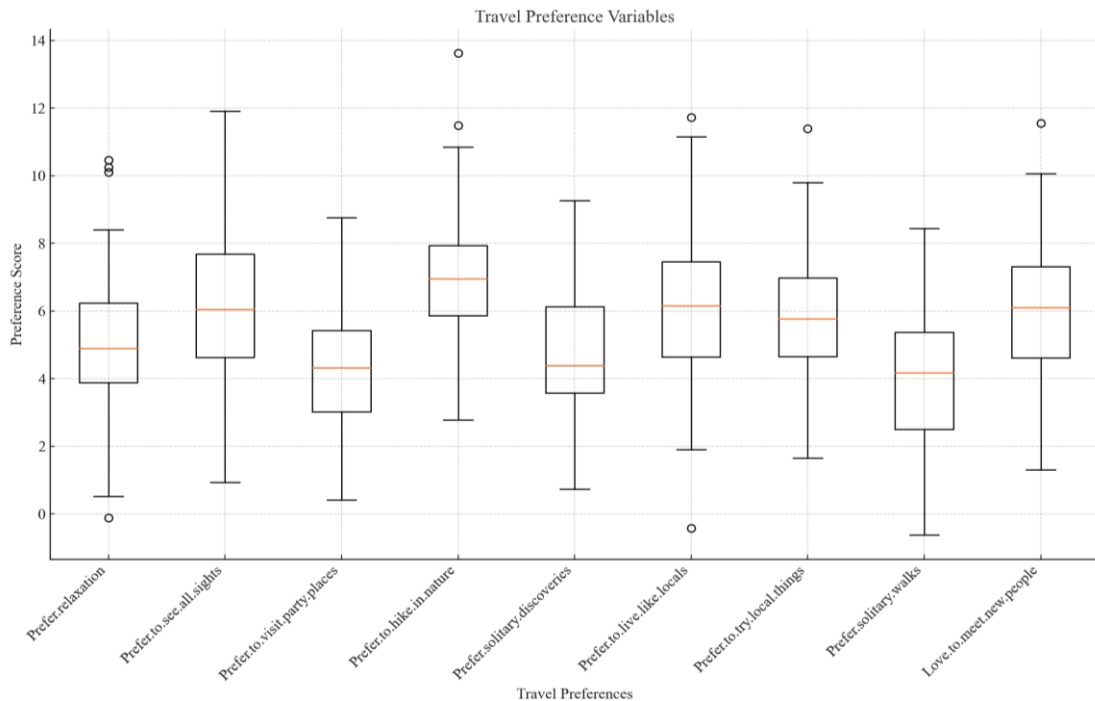


Figure 4. Boxplots for Travel Preferences

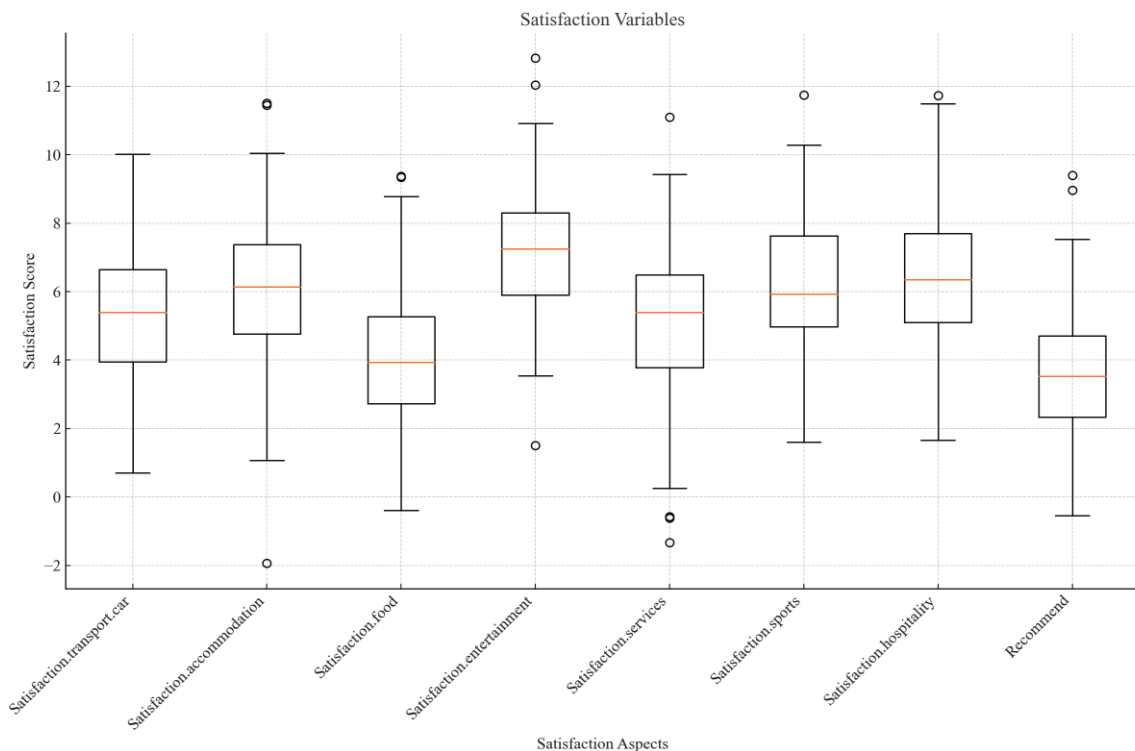


Figure 5. Boxplots for Satisfaction Levels

As for satisfaction levels, tourists exhibit high levels of satisfaction with the quality of accommodation (Gerdesics, 2017) and local services, each with a mean value of 3.52, pointing towards the critical role these factors play in shaping the overall travel experience. An international study investigating the satisfaction of Serbs with their vacations in Croatia found

that respondents were most satisfied with the natural beauty of the coastline, particularly in Istria, followed by the quality of accommodation services. High levels of satisfaction were also associated with the transportation infrastructure and the availability of entertainment and cultural opportunities, all of which scored above an average of 5 on a Likert scale ranging from 1 to 6. Lesser satisfaction was noted in the social interactions and communication between locals and tourists, which received an average rating of 3.2 (Blešić et al., 2018). Transportation satisfaction, while slightly lower, remains high at 3.34, indicating that ease of mobility is a significant, yet slightly less critical factor. Entertainment options and sports facilities receive slightly lower satisfaction levels, with mean values of 3.22 and 3.14 respectively, suggesting room for improvement in these areas to elevate the overall tourist experience. The hospitality of local people and the professionalism of local staff are also highly rated, with mean values of 3.46 and 3.43, reinforcing the idea that interpersonal interactions significantly contribute to tourist satisfaction. Finally, the likelihood of recommending the destination to friends, with a mean value of 3.59, reflects a strong endorsement of the overall experience, underscoring the positive perception and satisfaction of tourists with their travel experiences. Figure 6 depicts the correlation heatmap for the satisfaction variables.

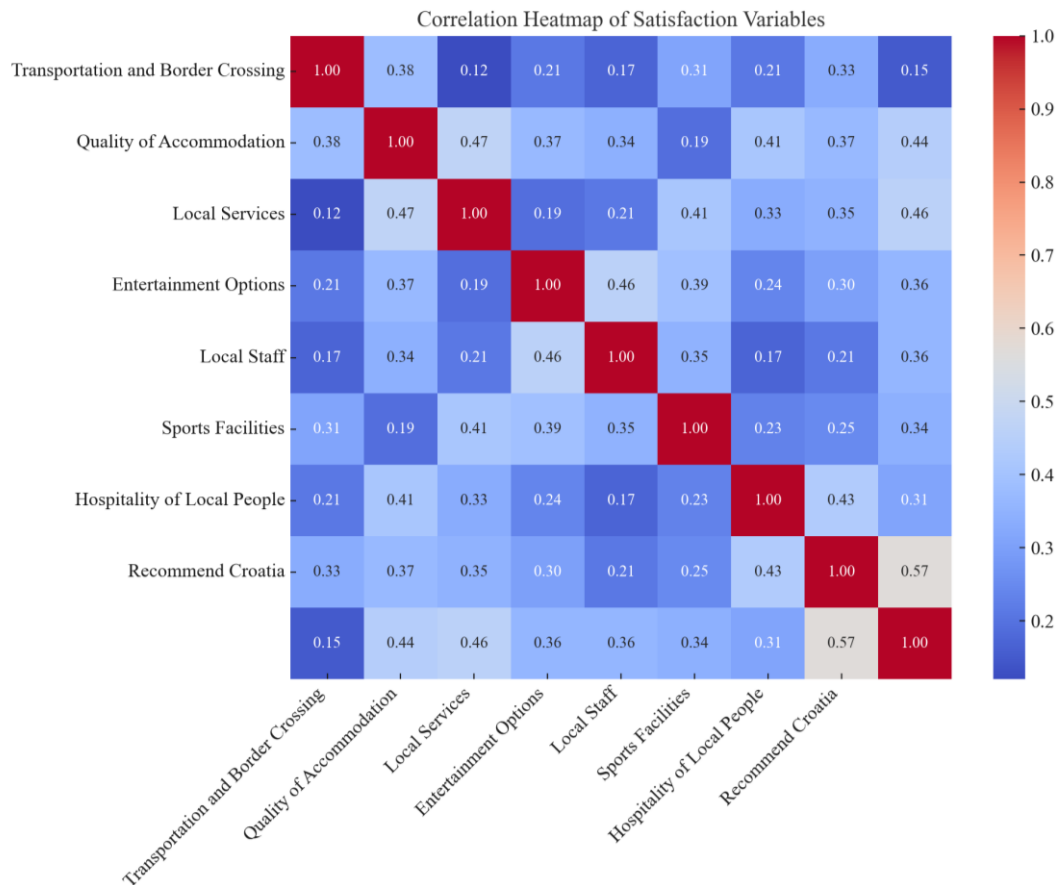


Figure 6. Correlation heatmap of Satisfaction Levels

The strongest correlation (0.573) is between satisfaction with "Local Services" and the likelihood to "Recommend" Croatia. This highlights the importance of high-quality local services (restaurants, shops, and other service providers) in influencing travelers' recommendations. There is a strong positive correlation (0.567) between "Hospitality of Locals" and "Recommend." Ensuring that locals are welcoming and hospitable can significantly enhance travelers' overall satisfaction and willingness to recommend the destination. A strong correlation (0.555) between satisfaction with "Local Staff" and "Hospitality of Locals" suggests that good service from local staff contributes to the perception of local hospitality. Training and encouraging local service providers to be friendly and helpful can improve this aspect. The correlation (0.441) between "Quality of Accommodation" and "Recommend" indicates that better accommodations can positively impact travelers' likelihood to recommend Croatia. Investing in high-quality lodging options can be beneficial. A moderate correlation (0.409) between satisfaction with "Entertainment Options" and "Sports Facilities" suggests that travelers who enjoy entertainment options also value good sports facilities. Providing diverse entertainment and sports activities can enhance the travel experience. These insights can help travel planners and service providers focus on improving specific aspects of their offerings to boost overall traveler satisfaction and increase positive recommendations.

In summary, the data reflects a clear preference among tourists for relaxing and culinary experiences, with moderate interests in exploration and social interactions. Satisfaction levels are generally high across most assessed dimensions, particularly in accommodation, services, and hospitality, indicating a favourable overall travel experience, as similarly corroborated by a satisfaction study conducted among Serbs (Blešić et al., 2018). However, certain areas like entertainment options and sports facilities present opportunities for further enhancement to meet tourist expectations more comprehensively.

1.2. Preferences predicting satisfaction

Using tourism preference variables as predictors of various satisfaction variables can be instrumental in understanding and enhancing the tourist experience (Kyriakaki and Kleinaki, 2022, Nilashi et al., 2022). Tourists have diverse preferences and expectations, which significantly influence their satisfaction levels. By studying these preferences, tourism researchers and practitioners can better understand what tourists value in their experiences allowing for the customization of services and experiences to meet specific needs and expectations, potentially increasing satisfaction. This is crucial in the highly competitive tourism industry, where differentiation based on personalized experiences can be a key success factor (Prayag, 2012, Mandić et al., 2018). By identifying preference variables that significantly predict satisfaction levels, service providers can focus on improving aspects of their service that are most likely to enhance overall tourist satisfaction. Finally, analysing how preferences relate to satisfaction can establish a feedback loop for continuous improvement (Hasegawa, 2010). Destinations and service providers can adjust their offerings in response to changing preferences and satisfaction levels, ensuring they remain attractive to tourists.

1.3. Satisfaction with local services

Focusing on satisfaction with local service providers, the final model demonstrates a statistically significant improvement over the intercept-only model, with a Chi-Square of 40.297, $df = 27$, and a p-value of .048. The thresholds for satisfaction levels are significantly different, suggesting clear distinctions between varying levels of satisfaction with local service providers. Among the preference variables, visiting all attractions shows a significant negative impact on satisfaction (OR for level 2 = $\exp(-1.002) = 0.367$, $p = .001$), indicating that individuals prioritizing sightseeing are less likely to be satisfied with local service providers compared to those not prioritizing this as much. A preference for preferring party places at level 3 significantly predicts lower satisfaction (OR = $\exp(-.799) = 0.450$, $p = .011$), showing that those with a high preference for these places are less satisfied with local service providers. Additionally, trying local foods and drinks at level 2 negatively impacts satisfaction (OR = $\exp(-.787) = 0.455$, $p = .038$), suggesting that tourists keen on local gastronomy may have higher expectations or different experiences influencing their satisfaction levels. Conversely, wanting to live like locals significantly increases satisfaction at levels 2 (OR = $\exp(.672) = 1.958$, $p = .028$) and 3 (OR = $\exp(.595) = 1.813$, $p = .050$), indicating that immersion in local culture and lifestyle positively influences satisfaction with service providers (Ruhanen et al., 2013).

1.4. Satisfaction with hospitality

The model significantly improves upon the intercept-only model, evidenced by a Chi-Square of 51,581 with 27 degrees of freedom and a significance level of .003. Significant findings include preferences for preferring party places and making friends or forming relationships as significant predictors of satisfaction with local hospitality. Specifically, tourists who prefer party places show a significant negative impact on satisfaction when preferring these places moderately (OR for level 2 = $\exp(-.960) = 0.383$, $p = .004$) to highly (OR for level 3 = $\exp(-1.016) = 0.362$, $p = .002$), indicating that an increased preference for party places is associated with lower satisfaction levels regarding local people's hospitality. Moreover, forming relationships presents a nuanced influence on satisfaction. A moderate preference for making friends or forming relationships (level 2) is significantly associated with lower satisfaction (OR = $\exp(-.589) = 0.555$, $p = .038$), suggesting that tourists with this preference might have different expectations that are not fully met, affecting their overall satisfaction with local hospitality.

1.5. Satisfaction with local entertainment

This model explores satisfaction with local entertainment options, demonstrating significant predictive power over the intercept-only model, as indicated by a substantial Chi-Square value of 101.961 at a significance level of $p < .0001$ for the first threshold, showcasing the model's effectiveness in distinguishing different levels of satisfaction based on the predictors included. The analysis reveals specific tourism preferences that significantly affect satisfaction with local entertainment options. A notable finding is the negative impact of preferring party places on satisfaction: tourists who moderately to highly prefer party places show significant dissatisfaction (OR for Level 1 = $\exp(-.971) = 0.379$, $p = .002$; OR for Level 2 = $\exp(-.755) = 0.470$, $p = .013$; OR for Level 3 = $\exp(-.791) = 0.453$, $p = .008$). This suggests that those seeking vibrant nightlife or similar entertainment may have higher expectations or specific preferences that are not fully met by the destination's offerings.

2. Segmentation

In our exploration of young Hungarian adults' travel preferences to Croatia, we analysed the sample employing a two-step clustering process through SPSS 28. This choice of technique was driven by its efficiency in handling mixed data types, allowing us to dissect our demographic-focused inquiry. The demographic variables considered—income level, gender, and the presence of children—were selected based on their substantial impact on travel behaviour, providing a comprehensive lens through which travel preferences could be segmented and understood. Mordekhai and Cownie (2020) discuss city branding through profiling international tourists based on their travel behaviour and socio-demographic profiles. In the context of Croatia, Jelinčić et al. (2017) suggest that Croatian city branding could significantly benefit from insights provided by segmentation. Figure 7 shows cluster distribution.

A significant silhouette value of 0.9 from our analysis affirmed the presence of distinct and meaningful clusters within our dataset, suggesting a segmentation that could offer tailored insights for the tourism industry. Despite identifying ten initial clusters, the practicality for targeted marketing and service provision necessitated a meta-clustering approach to streamline our analysis. The amounts in Euros are for 1 person/household.

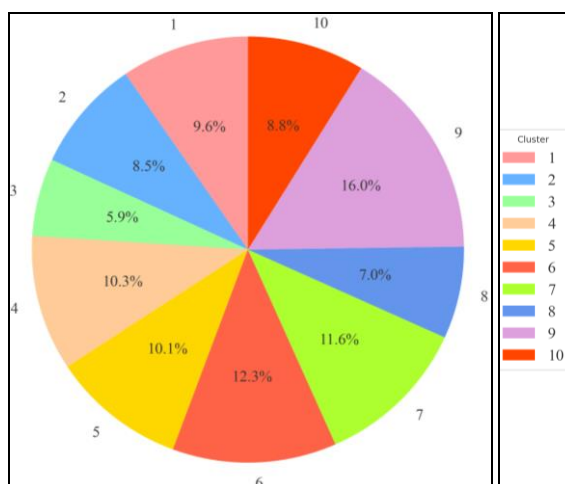


Figure 7. Cluster distribution

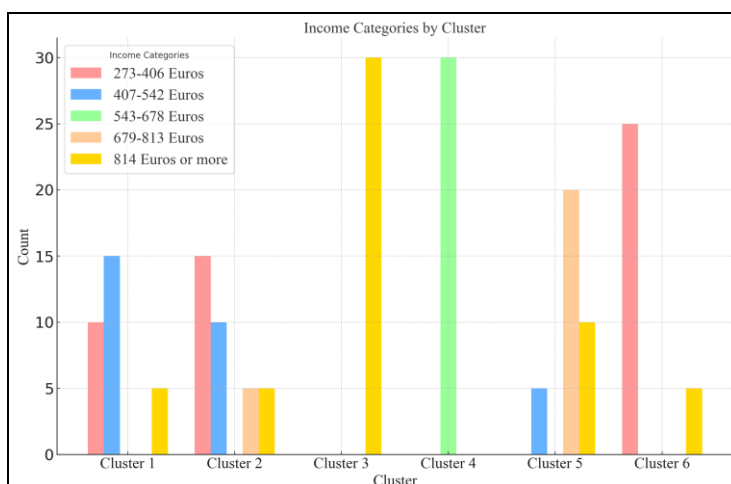


Figure 8. Income make-up of clusters

Original 10 Clusters

1. Cluster 1: Mixed-income females (predominantly income category 5) with children. Possible preference for diverse products and family-oriented services.
2. Cluster 2: High-income males (income category 6) without children. Likely to prefer premium and luxury products.
3. Cluster 3: Middle-income males (income category 3) without children. This cluster suggests a preference for value-for-money experiences.
4. Cluster 4: Upper middle-income males (income category 4) without children. Interest in quality travel experiences.
5. Cluster 5: High-income females (income category 5) without children. Likely to prefer premium travel experiences.
6. Cluster 6: High-income males (income category 5) without children. Interest in premium and luxury travel experiences.
7. Cluster 7: Lower middle-income females (income category 2) without children. Likely to seek budget-friendly options.
8. Cluster 8: Middle-income females (income category 3) without children. Preference for cost-effective travel packages.
9. Cluster 9: Upper middle-income females (income category 4) without children. Preference for premium travel experiences.
10. Cluster 10: High-income females (income category 6) without children. Likely to prefer luxury travel experiences.

Final Clusters with Profiles

1. High-Income Males Without Children (Clusters 2, 4, 6): Comprising males who do not have children and belong to the higher income brackets (Clusters 2, 4, 6). This grouping indicates their financial capability for a range of travel experiences, likely including premium and luxury products.
2. High-Income Females Without Children (Clusters 5, 9, 10): This consolidated cluster brings together females in the high-income category who do not have children (Clusters 5, 9, 10). The grouping reflects their economic status, which could influence their preference for premium and luxury travel experiences.
3. Middle-Income Females Without Children (Cluster 8): Representing females without children in the middle-income range (Cluster 8). This cluster's demographic data highlights a segment with potentially diverse travel interests that are cost-effective and budget-friendly.
4. Middle-Income Males Without Children (Cluster 3): Males without children across middle-income levels (Cluster 3) are included in this cluster. This cluster suggests a preference for value-for-money experiences.
5. Mixed Gender With Children (Cluster 1): Featuring a mix of males and females who have children, spanning various income levels (Cluster 1). This cluster is unique for its inclusion of children in the demographic profile, suggesting a wide array of potential family-oriented travel interests.
6. Lower Middle-Income Females Without Children (Cluster 7): Consists of females without children in the lower middle-income category (Cluster 7). This demographic cluster points to a specific economic segment, implying a consideration of budget in travel decisions without pinpointing specific activities or destinations.

Figure 8. presents the income make-up of the six clusters.

Understanding the income distribution within each cluster can have definite managerial benefits. It allows businesses to tailor their marketing strategies and product offerings to meet the specific needs and preferences of each demographic group. They can allocate resources more efficiently by focusing on high-potential clusters that have greater purchasing power, such as high-income individuals, or by offering budget-friendly options to lower middle-income groups. Insights into the income makeup help in developing products and services that align with the financial capabilities and lifestyle preferences of each cluster, leading to higher customer satisfaction and loyalty. Also, businesses can identify gaps in the market and explore new opportunities for growth, ensuring a comprehensive approach to market segmentation. Figure 9 shows how clusters differ in terms of satisfaction levels.

The chart illustrates the mean satisfaction scores for various aspects of the travel experience across six final clusters. Each cluster represents a distinct demographic group based on income and family status. The satisfaction variables include transportation and border crossing, quality of accommodation, local services, entertainment options, local staff, sports

facilities, hospitality of local people, and the likelihood of recommending Croatia. A statistical analysis using the Kruskal-Wallis H Test was conducted to determine if the differences in satisfaction scores between the clusters are significant.

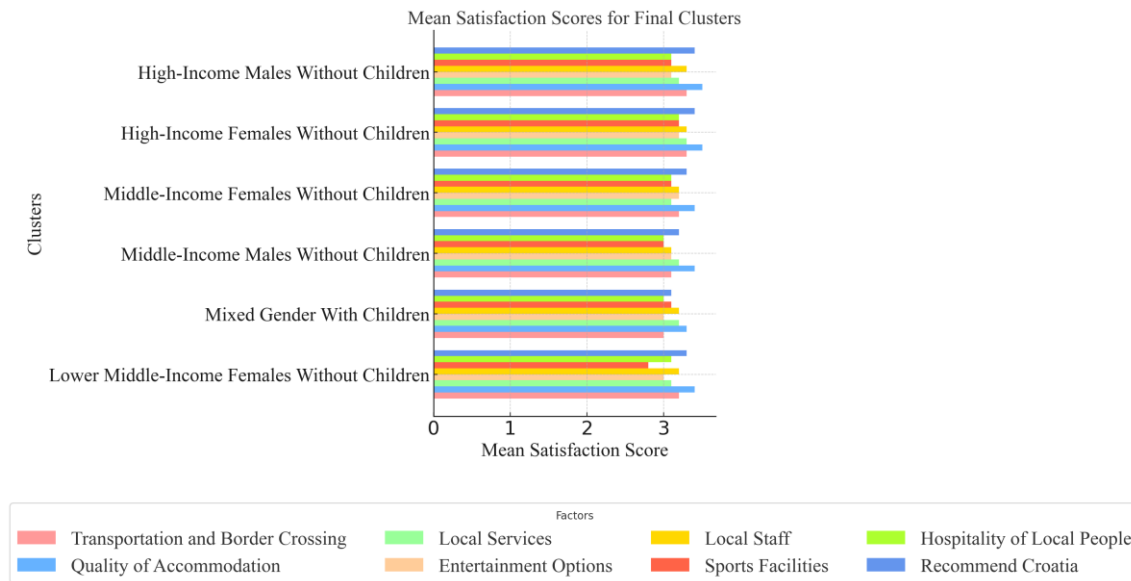


Figure 9. Satisfaction levels of clusters

The results indicate that for all satisfaction variables, the differences between the clusters are not statistically significant, with P-values well above the threshold of 0.05. These findings suggest that demographic factors such as gender, presence of children, and income level do not significantly influence satisfaction levels. While it might be somewhat counterintuitive that demographic factors do not significantly affect satisfaction levels, it is not entirely unrealistic. The results could indicate a generally high quality of tourism services in Croatia that meets the needs of diverse demographic groups.

3. The predictive power of clusters

3.1. Clusters predicting tourism preferences

Out of the eight tourism preference variables three was significantly predicted by some of the clusters. Propensity to try new things: The propensity to try new things significantly varies across the clusters, with each showing unique odds ratios that suggest how likely members are to engage in new experiences, based on ordinal regression analysis. Cluster 1: Members are significantly more likely to try new things, with an odds ratio of 3.307 (p-value = 0.001), indicating a strong inclination towards novelty. Cluster 2: This cluster shows an inclination towards new experiences, though less pronounced, with an odds ratio of 1.966 (p-value = 0.05), suggesting a moderate tendency that approaches statistical significance. Cluster 3: Exhibits a high likelihood of trying new things, with an odds ratio of 2.998 (p-value = 0.018), reflecting a significant propensity for engaging in new activities. Cluster 4: Demonstrates a considerable interest in new experiences, with an odds ratio of 2.489 (p-value = 0.047), indicating a statistically significant inclination towards novelty. Cluster 5: Similar to Cluster 3, members of this cluster have a high likelihood of seeking new experiences, with an odds ratio of 2.942 (p-value = 0.035), underscoring a significant interest in exploration.

Willingness to meet new people: Cluster 5 significantly stands out for its inclination to meet new people, with a compelling odds ratio of 3.49 (p-value = 0.010). This indicates that members of this cluster are significantly more likely to enjoy social interactions and seek out opportunities to connect with new individuals, highlighting a strong social propensity. Clusters 1, 2, 3, and 4: For these clusters, the inclination to meet new people does not reach statistical significance, as evidenced by their p-values (0.099, 0.781, 0.648, and 0.216, respectively). The social propensity observed in Cluster 5 might be attributed to a combination of factors: the desire for family-friendly social environments, the diversity of parental perspectives within a mixed-gender group, and the relative financial flexibility to pursue social interactions that are perceived as beneficial for family bonding and children's development.

Propensity to visit party places: Cluster 1 stands out with a statistically significant inclination towards liking places of partying, evidenced by an odds ratio of 2.221 (p-value = 0.025). This suggests that members of this cluster are over twice as likely to enjoy partying venues, indicating a strong preference for nightlife and social gathering spots.

3.2. Cluster predicting visitation frequencies

Ordinal regression was carried out to see if cluster membership significantly predicts visitation frequency to various Croatia cities (Zagreb, Rijeka, Pula, Porec, Rovinj, Zadar, Sibenik, Korcula, Trogir, Makarska, Vodice). These cities are actually key tourist destinations in Croatian tourism, therefore several tours deal with their appeal (Vojnović, 2023; Bunja and Kaplan, 2022; Dadić et al., 2022; Gracan, 2020; Palfi et al., 2023). The cities are marked on a schematic map in Figure 10. The city visit variables had 5 categories (1= no visit, 2=1 visit, 3=2 visits, 4=3 visits, 5= more than 3 visits). Only two of the cities had a significant association with the clusters.



Figure 10. The examined Croatian cities

Pula

The ordinal regression analysis assessing the visitation frequency to Pula, indicates a notable model improvement with a Chi-Square value of 18,667 ($df = 5$, $p = .002$), signifying that cluster membership significantly predicts visitation frequency. The model's adequacy is further confirmed by goodness-of-fit metrics, with Pearson Chi-Square at 17,778 ($p = .275$) and Deviance at 20,077 ($p = .169$). Notably, Cluster 2 presents a significant negative relationship with visitation frequency, with an odds ratio of $\exp(-.786) = 0.46$ ($p = .043$), implying members of this cluster are about 54% less likely to visit Pula compared to the reference group. Similarly, Cluster 3 shows a significant negative impact, with an odds ratio of $\exp(-1.434) = 0.24$ ($p = .011$), indicating an approximately 76% lower likelihood of visitation compared to the baseline. Other clusters did not demonstrate statistically significant effects on visitation frequency. Both clusters represent affluent females without children, indicating a preference for travel experiences that might differ from what Pula traditionally offers. These preferences could include high-end shopping, exclusive resorts, wellness retreats, or destinations renowned for their culinary scene, which might not be the primary attractions of Pula. The absence of children in both clusters suggests travel choices are not influenced by the need for family-friendly activities.

Rijeka

The ordinal regression analysis assessing the visitation frequency to Rijeka, based on cluster membership, shows a statistically significant improvement in the model with a Chi-Square value of 10,249 ($df = 5$, $p = .048$), indicating that cluster membership significantly predicts visitation frequency. The goodness-of-fit metrics confirm the model's adequacy, with Pearson Chi-Square at 22,056 ($p = .106$) and Deviance at 20,829 ($p = .142$). Significantly, Cluster 2 is negatively associated with visitation frequency, with an odds ratio of $\exp(-.898) = 0.41$ ($p = .014$), suggesting members of this cluster are about 59% less likely to visit Rijeka compared to the reference group. Cluster 4 also displays a significant negative impact on the likelihood of visiting Rijeka, with an odds ratio of $\exp(-1.479) = 0.23$ ($p = .004$), indicating an approximately 77% lower likelihood of visitation compared to the baseline. Cluster 5 approaches significance ($p = .050$), with an odds ratio of $\exp(-1.026) = 0.36$, implying a potentially lower likelihood of visitation by about 64%. Other clusters did not demonstrate statistically significant effects on visitation frequency. High-income females without children (Cluster 2) showing a decreased likelihood of visiting Rijeka could be due to their specific travel preferences, which may lean towards more exclusive or luxury-oriented destinations. Rijeka, known for its industrial heritage and as a significant port city, might not align with the interests or desires of this demographic looking for premium leisure experiences. The significant negative relationship for middle-income males without children (Cluster 4) could be attributed to a mismatch between the city's offerings and the cluster's interests or financial constraints. The decrease in visitation likelihood by Cluster 5 suggests that while Rijeka offers a variety of attractions, they may not be perceived as sufficiently appealing or suitable for families. This could be due to a perceived lack of family-oriented activities, amenities, or attractions in Rijeka.

Visits to other cities

Cross table analysis of city visit frequencies and cluster membership show divergent patterns. Cluster 1 and Cluster 5 seem to visit Zagreb more frequently than other cities, with many responses indicating 2 or more visits. Cluster 6 and Cluster 7 appear to visit coastal cities like Porec, Rovinj, and Makarska more often than inland cities. Cluster 3 shows a wide range of visit frequencies across various cities, suggesting diverse travel preferences within this group. Cluster 8 generally has lower visit frequencies across most cities compared to higher-income clusters. Zadar and Trogir seem to be popular destinations across multiple clusters, with many responses indicating 2 or more visits. Korcula appears to be a less frequently visited destination, with most clusters showing lower visit frequencies for this city. Clusters with children (Cluster 3) tend to have higher visit frequencies for family-friendly destinations like Makarska and Vodice. Higher-income

clusters without children (Clusters 1, 4, 5, 6, 7) seem to visit a broader range of cities more frequently, potentially indicating a greater ability to travel and explore different destinations. Lower-income clusters (Cluster 8) and middle-income clusters (Cluster 2, Cluster 4) generally have lower visit frequencies across most cities, suggesting budget constraints or other factors limiting their travel. Respondents were allowed to name any other cities they visited together with visitation frequency. Cross table analysis of them uncovered interesting patterns. In general, it seems that clusters 2, 5, and to some extent, 1 and 4 have demonstrated a higher propensity for visiting the additional Croatian cities mentioned, as evidenced by their relatively frequent visits ranging from 1 to 6 times. Notably, cluster 5 stands out for its particularly high visit frequencies to destinations like Krk, Plitvice, Vir, and Zrce, potentially indicating a preference for family-oriented travel experiences or attractions suitable for families with children. Similarly, cluster 2 exhibits a consistent pattern of visits across various locations, suggesting a diverse range of interests or travel motivations. In contrast, clusters 3 and 6 appear to have fewer recorded visits to these additional Croatian cities. This observation could be attributable to factors such as differing travel preferences, budget constraints, or other demographic characteristics unique to these clusters.

However, it is essential to exercise caution in drawing definitive conclusions, as individual preferences and circumstances may vary within each cluster. It is also noteworthy that certain destinations, like Split and Vir, seem to attract visitors from multiple clusters, potentially indicating their broad appeal or diverse offerings catering to various demographic segments. Conversely, other locations, such as Umag and Zrce, appear to have a more concentrated visitor base, possibly due to their specific attractions or niche appeal. In summary, High-income males without children (Cluster 1) and families (Cluster 5) show a marked preference for Zagreb, likely due to its rich mix of cultural and family-oriented attractions. Conversely, other clusters demonstrate a stronger inclination towards coastal cities like Porec and Rovinj, appealing for their leisure and seaside activities. Middle-high income females without children (Cluster 3) exhibit diverse travel preferences, indicating a broad interest in Croatia's cultural, historical, and natural attractions. Lower-income or constrained clusters tend to visit fewer cities, pointing to budgetary limitations impacting travel frequency and destination choice. Notably, certain destinations like Split and Vir attract a wide visitor base, suggesting their universal appeal, while others, such as Umag and Zrce, cater to more specific tastes or demographics.

4. Managerial implications

Based on the comprehensive analysis of the survey results regarding Hungarian young adults' tourism preferences, satisfaction levels, segmentation, and predictive power of clusters for visiting Croatia, several managerial implications for destination marketing emerge. These implications are tailored to the six final clusters identified, aiming to enhance the tourism experience and satisfaction of these distinct demographic segments.

High-income males without children: Given their significant likelihood to try new things and enjoy nightlife (OR = 3.307 for novelty; OR = 2.221 for party places), create premium adventure and exclusive nightlife packages. This could include high-end club experiences, private sailing trips to explore lesser-known coastal gems, and adventure sports tailored to thrill-seekers. **Mixed gender with children:** With a high propensity for trying new things (OR = 2.998), develop family-oriented adventure packages that are educational and engaging for all ages. Consider incorporating interactive cultural tours, family-friendly adventure parks, and experiences that allow for exploration and learning in a fun environment. Cultural values in multiple cities can provide a strong foundation for the development of these service packages, one such city could be Pula (Iveković and Sujoldžić, 2021).

High-income females without children: These clusters showed a significant inclination to meet new people, especially Cluster 5 (OR = 3.49). Marketing efforts should emphasize social events, workshops, and group tours that cater to female travellers, promoting networking and social interactions. Consider hosting exclusive events that combine local cultural experiences with opportunities for making new connections. Michalkó and Rácz (2005)'s study confirms that the design of experience-based tourism products is important for Hungarian tourists as well, for which cultural values can offer a good opportunity, an area where Croatian cities are strong. **Middle-income males without children (Cluster 2) and Low-income females without children (Cluster 8):** The negative relationship between these clusters and visitation frequencies to Pula and Rijeka suggests a need for targeted marketing to highlight the unique attractions and value propositions of these cities. For Cluster 2, emphasize value-for-money experiences, adventure sports, and historical tours. For Cluster 8, focus on budget-friendly options, highlighting free attractions, affordable accommodations, and local dining experiences. Hrgović et al., 2021 research on the quality assessment of accommodations was based on the responses of 168 foreign and domestic tourists staying in Croatia. Young people, university students, and those with higher educational qualifications rated the quality of apartment accommodations higher, experiencing greater satisfaction.

Given the high interest across clusters in trying new things and exploring new places, utilize AR (augmented reality) and VR (virtual reality) to offer immersive previews of destinations and activities. This could be particularly appealing for clusters with a high propensity for novelty, allowing potential visitors to virtually explore attractions, accommodations, and dining options, thereby enticing them with a taste of what to expect. Implement CRM (customer relationship management) and data analytics to tailor communication and offers. For example, for clusters with a high likelihood of enjoying party places (Cluster 1) or seeking new experiences (Clusters 1, 3, 4, 5), send personalized itineraries that highlight Croatia's vibrant nightlife, unique culinary experiences, or adventure sports. For clusters showing a significant inclination towards living like locals and engaging in cultural immersion (noted in the propensity to try local foods and drinks), collaborate with local communities to offer authentic experiences. This could range from farm-to-table dining experiences, local cooking classes, to volunteer opportunities that contribute positively to the local

environment or community. Given the overall trend towards sustainability in travel preferences, market eco-friendly travel packages that align with environmental conservation efforts. Highlight accommodations that practice sustainability, tours that respect wildlife and nature, and activities that promote cultural preservation (Remenyik et al., 2020).

Limitations

This study on Hungarian tourists' travel preferences to Croatian cities has limitations. The convenience sample of young adults (18-34) may not reflect the broader tourist population, limiting generalizability across ages. Self-reported data via online surveys could introduce response biases, impacting data accuracy. The study's cross-sectional design captures preferences at a single point, not considering the tourism industry's fluidity due to economic or global events. Its focus on Croatian cities limits applicability elsewhere, and the quantitative analysis lacks the depth that qualitative research could provide. Findings are specific to Hungarian tourists and may not apply to other demographics or destinations, with the online survey method potentially excluding less digitally-accessible populations.

CONCLUSION

This study provides an in-depth exploration of the travel preferences, satisfaction levels, and demographic segmentation of young Hungarian adults visiting Croatian cities. By utilizing a comprehensive quantitative approach—encompassing descriptive statistics, ordinal regression modeling, and clustering techniques—the research reveals patterns and relationships that carry substantial implications for the tourism industry.

The findings underscore the significance of the youth tourism market, which is among the fastest-growing and most dynamic segments within the global tourism sector. Respondents demonstrated a marked preference for relaxation and culinary experiences, supplemented by moderate interests in exploration, socialization, and immersive local encounters. The overall high satisfaction levels, particularly regarding accommodation, services, and hospitality, reflect positively on the Croatian tourism experience. However, the study also highlights areas for improvement, notably in entertainment options and sports facilities, which could further enhance tourist satisfaction. The analysis of tourism preferences and satisfaction levels reveals the nuanced ways in which tourists' expectations are met or unmet during their visits. For instance, while there is a strong preference for relaxing and enjoying local foods, the lower satisfaction with entertainment options indicates a gap between what tourists expect and what is available. This finding illustrates the necessity for tourism stakeholders to better align their offerings with tourist expectations to enhance overall satisfaction.

Demographic segmentation revealed distinct clusters with unique travel preferences and visitation patterns. For instance, high-income males without children exhibited a strong propensity for adventure and nightlife, while middle-income females without children showed a preference for cost-effective travel packages. These insights enable tourism stakeholders to develop targeted marketing strategies and tailored experiences that align with the specific needs and inclinations of different demographic groups. The predictive analysis of clusters on tourism preferences and satisfaction levels provided actionable insights. For example, clusters with a high likelihood of enjoying party places or seeking new experiences could be targeted with personalized itineraries highlighting Croatia's vibrant nightlife or unique adventure sports. Additionally, the study identified a significant negative relationship between certain clusters and visitation frequencies to cities like Pula and Rijeka, suggesting the need for targeted marketing to emphasize these cities' unique attractions and value propositions. The study emphasizes the importance of leveraging technology and sustainability in tourism marketing. Utilizing augmented reality (AR) and virtual reality (VR) to offer immersive previews of destinations and implementing customer relationship management (CRM) systems for personalized communication can enhance the tourist experience. Promoting eco-friendly travel packages that align with environmental conservation efforts is also crucial in meeting the growing demand for sustainable tourism.

In conclusion, this study lays a robust foundation for understanding the travel behaviors and preferences of young Hungarian tourists in Croatia. By providing a detailed analysis of demographic clusters and their corresponding satisfaction levels and visitation patterns, the research offers valuable guidance for tourism stakeholders. These insights can inform the development of targeted marketing strategies, optimized service offerings, and sustainable tourism practices, ultimately fostering lasting relationships with visitors from diverse demographic segments and contributing to the sustainable growth of Croatia's tourism industry. Future research could benefit from incorporating qualitative methods, longitudinal studies, and cross-cultural comparisons to enrich the understanding of tourist behavior and preferences. Such research would provide deeper insights into the motivations and experiences of tourists, enabling more effective and nuanced tourism strategies.

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