

HOW DOG OWNERS LEISURE PATTERNS INFORM DESTINATION PREFERENCES: INSIGHTS FORM HUNGARY

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Abstract: This article investigates the leisure and travel behavior of Hungarian dog owners, focusing on their preferences for destinations and activities that accommodate their canine companions. The study utilizes a comprehensive methodological approach, including a quota sample of Hungarian dog owners, an online self-reported questionnaire, and advanced statistical analyses such as robust factor analysis with Robust Diagonally Weighted Least Square (RDWLS) extraction and clustering of factor scores, to explore the dynamics of pet inclusive tourism. Results reveal distinct clusters of dog owners with varying leisure preferences and demonstrate significant associations between these preferences and destination choices, underscoring the importance of dogfriendly accommodations and activities. The findings highlight a shift towards personalized tourism experiences catering to dog owners, suggesting that destinations should adopt inclusive practices to attract this demographic. This research contributes to the understanding of petinclusive tourism, offering practical implications for destination marketers and service providers worldwide to better accommodate traveling dog owners.

Keywords: leisure time with pets, destination preferences, leisure patterns, segmenting dog owners, traveling with dogs

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INTRODUCTION

Historically, dogs have held a revered place in Hungarian society, a legacy traceable to the nomadic origins of the Magyar people, for whom dogs were indispensable companions in hunting, herding, and protection. This deep-seated bond is reflected in the nation's folklore and traditions, where dogs are often depicted as loyal protectors and members of the family.

In Hungary, a discernible increase in the canine population is evident, with the count nearing 3 million pets, a rise notably influenced by the COVID19 pandemic (Vetter, 2022). Concurrently, there has been a paradigm shift in the perception and function of dog ownership. Transitioning from their traditional role as household sentinels, dogs are now increasingly esteemed as cherished companions and integral members of the family. International research has illuminated the leisure pursuits, physical activities, and travel engagements of dog owners, particularly where dogs are regarded as essential family elements (Arnberger and Hinterberger, 2003; Blichfeldt et al., 2018; Carr, 2009; Kirillova et al., 2015; Rickly et al., 2020). However, a comprehensive and nuanced exploration into the leisure and travel behaviors of dog owners remains to be undertaken, despite some studies focusing on travel habits and dog accommodating facilities (Dotson et al., 2010; Kovács et al., 2022). It must be noted, when we refer to "travel" in the context of this study, we are specifically addressing travel activities undertaken for the purpose of holidaymaking with dogs. With the rising population of dog owners in Hungary, it is imperative to investigate this demographic from diverse perspectives. This article is committed to exploring how dog owners' leisure tendencies impact their preferences when choosing destination to visit with their canine companions as well as segmenting dog owners based on their leisure preferences. The results of both analyses are translated into managerial implications for destination professionals. The Hungarian context, from which the study's respondents originate, offers a valuable case study in balancing global trends with local specificities. The insights gained from Hungarian dog owners, who engage in travel both within Hungary and abroad, contribute to a broader understanding of the evolving dynamics of pet-inclusive tourism worldwide. It highlights the need for the tourism industry to consider the diverse needs of traveling dog owners, encouraging destinations and service providers to adopt more inclusive practices that cater to this demographic (Hoy et al., 2023). In doing so, the research not only enriches the discourse on dog-friendly travel but also provides practical implications for destinations worldwide seeking to attract and accommodate petowning travellers.

LITERATURE REVIEW

Alongside an increasing interest in cultural activities (Bósz, 2020; Chen and Rahman, 2017; Johanson and Olsen, 2010), current leisure trends reveal a growing inclination towards active leisure as a countermeasure to sedentary lifestyles, primarily aimed at health preservation (Csapó and Gonda, 2019; Roy et al., 2021; Szende et al., 2002). This demand for physical activity and active participation in leisure sports significantly manifests in tourism (Terzić et al., 2021; Csapó and Gonda, 2019; Kolotukha et al., 2022) and in outdoor recreation (Chashina et al., 2020), indicating a shift in tourist preferences towards incorporating health (Ge and Chen, 2024) and fitness into their travel experiences. Despite abundant research on leisure activities and their manifestation during tourism, studies focusing on the leisure patterns and travel habits of dog owners, including their recreational preferences while traveling, are notably scarce (Hoy et al., 2024). Yet, the demographic of dog owners is expanding both domestically and internationally, suggesting an emerging market segment with distinct leisure and travel needs. A 2021 study in Hungary highlighted a substantial increase in dog ownership during the COVID-19 pandemic, with dog owning households rising to 50.4% from 36% in 2018 (Vetter, 2022). This underscores the significance of investigating dog owners' consumer behavior, particularly their leisure patterns and travel preferences.

Research on dog owners' leisure activities has predominantly focused on dog walking and dog sports, exploring the health benefits of these physical activities. It is reported that a significant majority of dog owners regularly engage in dog walking, with participation rates ranging between 40-80% (Bauman et al., 2001; Ham et al., 2006; Schofield et al., 2005; Suminski et al., 2005; Thorpe et al., 2006). Comparative studies have observed notable differences in overall physical activity levels between dog owners and nonowners (Brown and Rhodes, 2006; Thorpe et al., 2006; Rhodes et al., 2020) with dog ownership leading to increased physical activity as owners generally walk more than those without dogs (Brown and Rhodes, 2006; Christian et al., 2013a; 2013b; Cutt et al., 2008a; 2008b; Christian et al., 2014; Dembicki and Anderson, 1996; Headey, 1999; Schofield et al., 2005; Westgarth et al., 2019). This enhancement in physical activity is not only beneficial for physical health but also contributes to the prevention of noncommunicable diseases (Utz, 2014) and played a pivotal role in promoting physical activity during the COVID19 pandemic (Hoffman, 2021; Tan et al., 2021). These insights into dog owners' leisure patterns are crucial as they extend to travel behaviours, aligning with current tourism trends that prioritize health as a significant value in both leisure and tourism motivations.

The growing demand for active and outdoor leisure activities reflects the rising popularity of active tourism, particularly significant for dog owners as it enhances their leisure experiences and tourism participation by catering to the needs of their dogs (Kirillova et al., 2015; Rickly et al., 2020). This trend underscores a significant shift in the tourism industry, recognizing pets as integral to their owners' lifestyle and thus incorporating pet-friendly amenities and activities into their offerings. Such initiatives not only cater to a previously underserved demographic but also open new avenues for innovation in how cultural and leisure activities are designed and marketed to the public. Events like Hungary's Valley of the Arts festival, organized in cooperation with Kutyabárát.hu in 2017, have started to accommodate pet needs, indicating a potential area for development in cultural tourism for pet owners (Kutyabarat.hu). Several studies have examined dog owners' travel habits, highlighting factors such as household income influencing the propensity to travel with pets and the importance of cleanliness and a "safe" environment in accommodation choices (Dotson et al., 2010; Hwang and Ryu, 2022; Tang et al., 2022). Literature on leisure travel also delves into tourists' destination motivations including personal development, relaxation,

family bonding, familiarity with the destination, cost value ratio, proximity, local attractions, and supportive travel facilities (Božić and Tomić, 2016; Zakoski, 2021; Wijaya et al., 2018). Surveys in the United States and the United Kingdom reveal that over 40% of pet owners opt to bring their pets on vacation (K9 Magazine, 2012, TripAdvisor, 2012).

While cluster analysis carried out for marketing purposes is common in tourism research (Matiza and Kruger, 2021; Saayman et al., 2012; Vysochan et al., 2021), segmenting dog owners using clustering techniques is almost completely missing from literature. As a rare exception, Chen and Rahman (2017) analyzed the consumption habits and travel motivations of dog owners in China, identifying distinct clusters based on their focus on the humanpet relationship, the needs and preferences of the pet owners themselves, and the benefits obtained for their pets (Tan et al., 2021).

This literature review underscores the importance of understanding the leisure habits, travel preferences, and destination choice motivations of dog owners in the context of changing leisure patterns within modern society. The emergence of dog owners as a unique demographic with specific leisure and travel needs highlights a gap in the literature, despite the growing trend of pet ownership and the demand for pet inclusive travel options. Research in this area not only expands scientific knowledge but also provides practical insights for the tourism industry to develop pet friendly services and infrastructure, catering to this emerging market segment.

MATERIALS AND METHODS

In the figure below, we have summarized the flow of the research and the applied methods, which have been illustrated graphically (Figure 1).

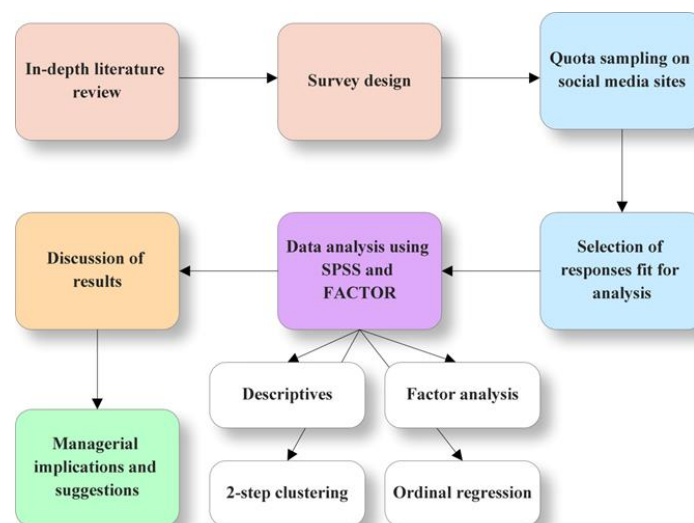


Figure 1. Summarizes the research process

1. Sampling procedure

We conducted our study utilizing a quota sampling (Liu et al., 2024), considering the diversity of settlement types in Hungary. We specifically focused on settlement types, as the conditions and purposes associated with dog ownership (such as living in a yard or apartment and keeping dogs as guardians or companion animals) exhibit a heterogeneous pattern that cannot be adequately captured by other criteria. Data collection took place over a period of six months and was conducted within topicspecific social media groups that cater to dog owners.

2. Instruments

In the design of the online selfreported questionnaire utilized for this study, a deliberate decision was made to exclude opened questions. This decision was grounded in two primary considerations: the ease of completion for respondents and the streamlined processing of responses for analysis. Given the broad scope of the survey and the desire to engage a diverse and potentially large pool of participants, it was paramount to ensure that the questionnaire was as accessible and straightforward as possible. We distributed the questionnaire online via various social platforms and targeted dogrelated communities, monitoring the completion rate based on geographical settlements. Following assurance of research anonymity and asking for informed consent, participants were provided with the opportunity to complete the questionnaire. It was emphasized that all data collected would be treated with utmost confidentiality, solely for research purposes within the realm of education, and inaccessible to third parties. The survey was made available to Hungarian residents aged 18 and above. The study was conducted according to the guidelines of the Declaration of Helsinki, and approved by the Ethics Board (GTK-KB 001/2023) at the Faculty of Economics and Business of the University of Debrecen.

In the initial phase of the questionnaire, respondents were queried regarding their sociodemographic and socioeconomic circumstances, encompassing factors such as place of residence, age, and financial situation. It was followed by questions about preferred means of travel and preference for certain topographical features of the destination. The survey also delved into the preferences for destination characteristics and leisure behavior among dog owners. These sections aimed to uncover the types of environments and activities that are most appealing to dog owners when selecting a vacation spot to visit with their dogs as well as their typical leisure preferences and types of activities they engage in with their dogs.

3. Data analysis

The data analysis was conducted using FACTOR 10.10.02 software for factor analysis and obtaining factor scores, and IBM SPSS version 28 for descriptive statistics, twostep clustering, and ordinal regression. FACTOR software was chosen for its robust factor analysis capabilities, identifying distinct underlying patterns in leisure activities and calculating factor scores to be used in the cluster analysis (Lorenzo Seva and Ferrando, 2006). SPSS was used to overview respondent characteristics and behaviors through descriptive statistics and segment them via twostep clustering.

4. Characteristics of the sample

In our study of 553 dog owners, the participants had an average age of 36.38 years. The majority resided in towns (61%), with others living in the capital (20%) and villages (19%). Financially, half of the respondents could save a little from their earnings, while 18% managed a very good living with savings, and another 18% made just enough to live on. Regarding dog ownership, 62% had one dog, and 25% owned two dogs. Monthly spending on their dogs varied, with 52% of owners spending over USD 46.88, indicating a significant investment in their pets' wellbeing.

RESULTS AND DISCUSSION

1. Recreational activity and travel frequency

Dogs significantly enhance their owners' engagement in recreational activities, contributing to increased physical activity levels among 55.6% of dog owners. This is supported by a strong positive association between dog ownership and perceived physical activity levels, with respondents rating the statement "I feel more active" above 4 on average (Figure 2), aligning with findings from previous studies (Cutt et al., 2008a; 2008b; Christian et al., 2013a; 2017; Cutt et al., 2007; Lim and Rhodes, 2016; Moniruzzaman et al., 2015; Oka and Shibata, 2009; Owen et al., 2010; Westgarth et al., 2014).

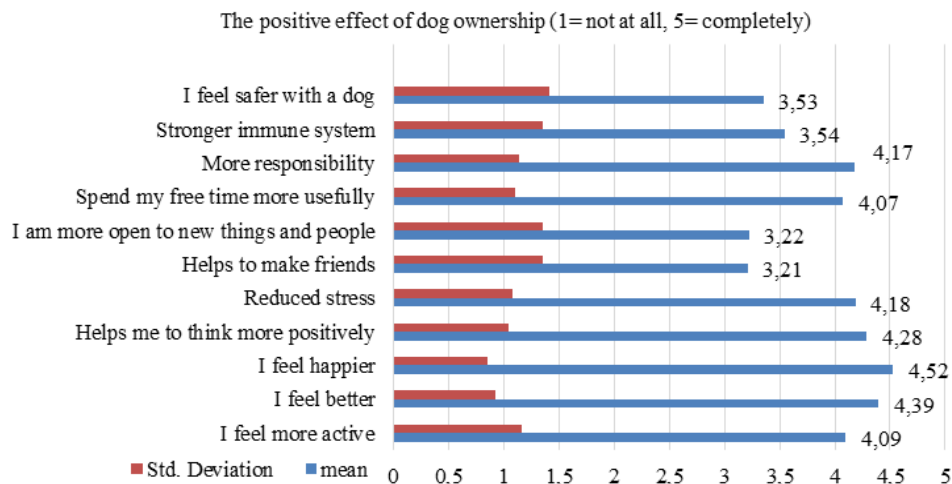


Figure 2. The evolution of the mean and standard deviation values of the positive effects of dog ownership on a 1 to 5 Likert scale

Regarding travel patterns, 79% of dog owners vacation with their dogs, with preferences for travel times aligning with weekends and public holidays. Urban residents, particularly those from the capital, show a higher frequency of trips with their dogs, favoring car travel (Figure 3.), which mirrors broader trends in dog transportation (Mariti et al., 2012).

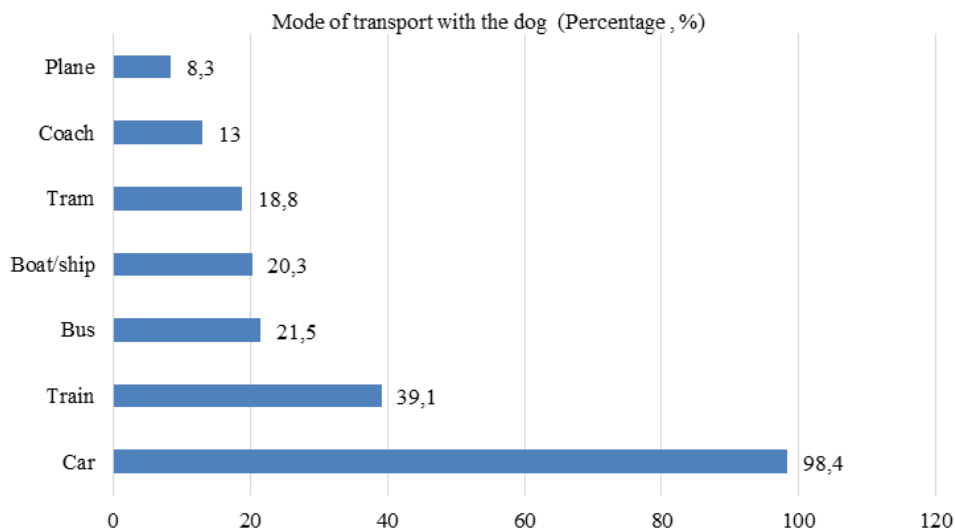


Figure 3. The evolution of trips with dogs and the means of travel used during dog transport in the sample

Natural destinations, especially forests and waterfronts, are preferred by dog keepers, highlighting a trend towards naturecentric tourism activities (Chang et al., 2024) among this group. This preference is consistent with studies highlighting the popularity of coastal, waterside, and forested areas for tourism, with dog owners utilizing natural parks primarily for dog walking, while also engaging in cycling and hiking (Arnberger and Hinterberger, 2003).

In contrast, urban environments and resorts are less favored, partly due to restrictions on dogfriendly facilities and activities. The findings suggest that dog owners' travel and recreational preferences could inform targeted tourism strategies, emphasizing natural landscapes (Vijulie et al., 2018) and dogfriendly policies to cater to this demographic's specific needs (Arnberger and Hinterberger, 2003; Czeplédi et al., 2020).

2. Regression analysis

The study operationalized destination preferences through thirteen binary variables representing the presence or absence of certain characteristics deemed important by the participants when selecting a travel destination to visit with their canine companions. Correspondingly, thirteen predictor variables captured a range of leisure preferences, reflecting the activities and attitudes of dog owners toward leisure time engagement.

Logistic regression models were used to explore the association between each leisure preference predictor and the likelihood of valuing specific destination characteristics. The binary nature of the dependent variables allowed for a clear delineation of preference, facilitating an understanding of which destination features are prioritized by dog owners with particular leisure inclinations. Table 1 summarizes the significant results of the regressions:

Table 1. How leisure preferences predict destination features preferences

Note: The numbers in brackets in the Significant Predictors column denote the category level of the variable

Preferences when choosing destination	Significant Predictors (Leisure preferences)	Odds Ratio (OR)	95% CI	p-value
Chance to do dog sports	New activities	3.004	(1.195, 11.416)	0.008
Chance to do dog sports	New activities	1.984	(2.983, 36.635)	0.024
Chance to do dog sports	Cultural programs	2.103	(1.043, 4.239)	0.038
Chance to do dog sports	Cultural programs	1.873	(0.966, 3.632)	0.050
Chance to do dog sports	Dog sports	6.027	(2.598, 13.984)	0.000
Chance to do dog sports	Dog sports	2.029	(0.983, 4.188)	0.050
Dog friendly accommodation	Freetime with dog (2)	6.842	(1.546, 30.272)	0.011
Dog friendly accommodation	Freetime with dog (3)	2.285	(0.958, 5.451)	0.050
Dog friendly accommodation	Freetime with dog (4)	2.419	(1.207, 4.845)	0.013
Dog friendly accommodation	Sport with dog (1)	4.300	(1.551, 11.918)	0.005
Dog friendly accommodation	Sport with dog (2)	2.724	(1.017, 7.297)	0.046
Dog friendly accommodation	Sport with dog (3)	2.331	(0.932, 5.831)	0.050
Programs in the area	Sport with dog (1)	4.693	(1.672, 13.176)	0.003
Programs in the area	Sport with dog (2)	4.375	(1.585, 12.073)	0.004
Programs in the area	Sport with dog (3)	2.855	(1.107, 7.359)	0.030
Local programs	Do sport daily (2)	2.121	(1.020, 4.410)	0.044
Vacation costs low	Races at weekends (3)	4.684	(1.660, 13.212)	0.004
Vacation costs low	Cultural programs (1)	2.665	(1.328, 5.347)	0.006
Vacation costs low	Cultural programs (2)	2.498	(1.271, 4.909)	0.008
Vacation costs low	Cultural programs (4)	2.144	(1.051, 4.372)	0.036
Good past experience	Freetime with dog (2)	13.192	(2.755, 63.169)	0.001
Good past experience	Freetime with dog (3)	4.895	(1.991, 12.034)	0.001
Good past experience	Stays home (1)	0.183	(0.050, 0.672)	0.011
Good past experience	Stays home (2)	0.159	(0.039, 0.659)	0.011
Accessibility	Freetime with dog (2)	4.705	(0.967, 22.902)	0.050
Accessibility	Freetime with dog (3)	3.022	(1.392, 6.564)	0.005
Good climate	Freetime with dog (2)	7.638	(1.643, 35.494)	0.009
Good climate	Freetime with dog (3)	2.484	(1.125, 5.481)	0.024
Good climate	Races at weekends (1)	0.113	(0.039, 0.328)	0.000
Good climate	Races at weekends (2)	0.224	(0.070, 0.722)	0.012
Good climate	Sport with dog (1)	5.700	(2.387, 13.612)	0.000
Good climate	Sport with dog (2)	2.314	(0.990, 5.409)	0.050
Cheap accommodation	New activities (1)	3.036	(1.512, 6.095)	0.002
Cheap accommodation	New activities (2)	2.492	(1.278, 4.859)	0.007
Dog's needs	Passive relaxation (3)	0.232	(0.069, 0.779)	0.018
Dog's needs	Freetime with dog (2)	25.742	(3.941, 168.122)	0.001
Dog's needs	Freetime with dog (3)	10.030	(3.358, 29.956)	0.000
Seasonal conditions	Freetime with dog (2)	7.385	(1.629, 33.479)	0.010
Seasonal conditions	Freetime with dog (3)	2.908	(1.261, 6.709)	0.012
Seasonal conditions	Sport with dog (1)	5.199	(2.043, 13.233)	0.001
Seasonal conditions	Sport with dog (2)	2.845	(1.135, 7.129)	0.026

In assessing the travel preferences of dog owners, logistic regression analyses underscored specific leisure behaviors as significant predictors for choosing destinations with particular features. As shown in Table 1 predilection for trying new activities notably increased the odds of selecting destinations offering dog sports (OR = 3.004, $p = 0.008$ for Level 2 activities; OR = 1.984, $p = 0.024$ for Level 3 activities). Cultural programs were also a significant predictor for this preference (OR = 2.103, $p = 0.038$; OR = 1.873, $p = 0.050$). The analysis further revealed that dog owners who spend more leisure time with their dogs are more likely to prefer dogfriendly accommodations (OR = 6.842, $p = 0.011$ for Level 2; OR = 2.419, $p = 0.013$ for Level 4), and are more inclined towards areas with engaging programs (OR = 4.693, $p = 0.003$ for sport with dogs Level 1). The cost of vacation emerged as a consideration influenced by cultural program interests (OR = 2.665, $p = 0.006$ for Level 1; OR = 2.498, $p = 0.008$ for Level 2). Previous positive travel experiences affected future destination choices, with those enjoying leisure time with their dogs likely to repeat the experience (OR = 13.192, $p = 0.001$ for Level 2; OR = 4.895, $p = 0.001$ for Level 3), whereas those who prefer to stay home showed lower odds (OR = 0.183, $p = 0.011$ for Level 1). Accessibility was notably associated with time spent with dogs (OR = 4.705, $p = 0.050$ for Level 2), and climate preference was tied to both leisure time with dogs and participation in dog sports. Economical accommodation choices were driven by a desire for new experiences (OR = 3.036, $p = 0.002$ for Level 1), while dog needs heavily influenced those spending leisure time with their dogs (OR = 25.742, $p = 0.001$ for Level 2).

Overall, these results demonstrate that dog owners' leisure behaviors significantly predict their preferences when selecting dogaccommodating destinations, with active engagement in dogrelated activities and cultural interests playing a key role.

3. Factor analysis

Respondents were requested to evaluate thirteen leisure preference statements using a Likert scale ranging from 1 to 5, with scale points, 1: Not characteristic at all 2: Slightly characteristic 3: Somewhat characteristic 4: Very characteristic 5: Completely characteristic. We conducted an exploratory factor analysis (EFA) employing advanced statistical techniques to ensure the robustness and accuracy of our factor solution. To accommodate ordinal data and address missing values, we utilized HotDeck Multiple Imputation (Lorenzo Seva and van Ginkele, 2016), with a missing code value of 999, ensuring a comprehensive dataset for analysis. The analysis was based on polychoric correlations to accurately estimate relationships between ordinal variables. We extracted factors using the Robust Diagonally Weighted Least Squares (RDWLS) method, specifically chosen for its efficacy with ordinal data and its robustness against nonnormal distributions. Factor rotation was achieved through Promax with a parameter $k=4.0$, following a clever rotation start with Raw Varimax, allowing us to acknowledge and incorporate the correlation between factors. The robustness of our analysis was further enhanced by employing biascorrected and accelerated (BCa) bootstrap techniques (ÇavuGoğlu et al., 2020, Zarrel et al., 1991) with 500 samples, alongside (Asparouhov and Muthén, 2009) correction for robust Chisquare, to ensure accurate and reliable estimates of standard errors and confidence intervals. Factor scores were estimated based on a linear model, facilitating their direct application in subsequent analyses. Table 2 shows the rotated loading matrix.

Table 2. Rotated loading matrix

Indicators	F1	F2	F3	F4
7. If I can, I spend my freetime in nature.	0.84			
10. I like travelling in my freetime.	0.6			
12. I like cultural programs.	0.61			
3. I spend part of my freetime with my dog.		0.97		
5. I like to spend my freetime with animals.		0.92		
11. I prefer sport to be done with dogs.		0.56		
2. I prefer passive leisure.			0.5	
6. I like solitary activities.			0.67	
13. I do not like to leave my home.			0.7	
1. I spend my freetime actively.				0.51
8. I do sports daily.				0.86
9. At weekend I take part in sport competitions.				0.83

As shown in table 2, factor loadings are all in the acceptable range. The indices of factor simplicity suggest a high degree of clarity in the factor structure. Bentler's simplicity index, with a value of 0.91, falls at the 100th percentile, which is exceptionally high, indicating that the factors are welldefined and distinct. The bootstrap confidence interval for this index is also very tight, ranging from 0.855 to 0.966, further emphasizing the robustness of the factor simplicity. The Loading Simplicity Index (LS), at 0.42, also hits the 100th percentile, signifying that the factor loadings are straightforward and interpretable. The confidence interval for LS, between 0.397 and 0.485, though wider than Bentler's index, still confirms a reasonable level of loading simplicity.

McDonald's ordinal Omega and the standardized Cronbach's alpha for the dataset are both above 0.8, indicating a high level of internal consistency among the items, suggesting that they reliably measure the underlying construct.

4. Cluster analysis

Twostep cluster analysis was utilized because it efficiently manages large datasets and complex variables, automatically determines the number of clusters, and is particularly adept at uncovering hidden patterns and groupings

in the data. This method is suitable for exploratory analysis where the number of clusters is not predetermined, allowing for a data-driven approach to segmentation of dog owners. The clustering algorithm was run on the factor scores of the respondents. To accurately represent the latent constructs underlying dog owners' leisure preferences and their destination choice behaviors, we employed expected a posteriori (EAP) factor scores transformed to T-scores. EAP estimation provides robust factor scores by incorporating both the individual's responses and the distribution of the underlying trait in the sample population. This method ensures a more precise estimation of factor scores compared to traditional methods, which may not account for the probabilistic nature of the latent traits. The transformation of EAP factor scores into T-scores facilitates the interpretation of our results. T-scores, standardized with a mean of 50 and a standard deviation of 10, offer a familiar metric for comparing individual scores against the sample distribution.

This normalization allows for a straightforward comparison between respondents, highlighting individual variations in preferences within a standardized framework. The use of T-scores also enhances the comparability of our findings with other studies and allows for the inclusion of our results in broader meta-analyses. FA extracts latent factors, enhancing interpretability and discriminative power in subsequent CA. In contrast, direct clustering of raw Likert data may lead to less interpretable and stable clusters due to multicollinearity and the high dimensionality of the data. Table 3 shows the Means and Importance values for the components (factors) in the clusters:

Table 3. Summary table of the four clusters

	Cluster 1	Cluster 2	Cluster 3	Cluster 4
Factor 4 Mean	74.24	31.12	38.32	19.22
Factor 4 Importance	0.9	0.20	0.30	0.10
Factor 3 Mean	41.02	49.35	81.47	29.16
Factor 3 Importance	0.20	0.30	0.7	0.10
Factor 2 Mean	30.51	80.00	52.76	36.98
Factor 2 Importance	0.10	1.00	0.30	0.20
Factor 1 Mean	58.14	39.22	33.65	77.16
Factor 1 Importance	0.70	0.50	0.20	0.8

As depicted in table 3, Cluster 1 shows the highest mean for Factor 4 (74.24) and high importance for Factors 4 (0.9) and 1 (0.7). Cluster 2 emphasizes Factor 2 with the highest mean (80.00) and importance (1.0). Cluster 3 highlights Factor 3 with a mean of 81.47 and the highest importance value (0.7). Cluster 4 stands out for Factor 1 with a mean of 77.16 and high importance (0.8). The following clusters were discovered:

Cluster 1: The Outdoor Aficionados

Mean Values: High in Factor 4, moderate in Factor 1, low in Factors 2 and 3. Importance: Factor 4 is most defining with a very high importance, followed by Factor 1. This cluster prominently features individuals who prefer an active lifestyle, heavily skewed towards outdoor and nature-related activities, as suggested by their high mean in Factor 4. Their leisure activities are significantly influenced by their affinity for nature (Indicator 7: 0.84), with a reasonable engagement in travel and culture as secondary preferences.

Cluster 2: The Canine Companions

Mean Values: Highest in Factor 2, lower in Factors 1, 3, and 4. Importance: Factor 2 is paramount, followed by Factor 1. Cluster 2 is distinguished by a profound commitment to spending leisure time with dogs, possibly engaging in dog sports or outdoor activities with their pets. Their leisure time is defined by a deep relationship with their dogs (Indicator 3: 0.97) and a general appreciation for animals (Indicator 5: 0.92).

Cluster 3: The Home-Centered Solitudinarians

Mean Values: Highest in Factor 3, moderate in Factor 2, low in Factors 1 and 4. Importance: Factor 3 is the most crucial, considerably more than Factor 2. Individuals in this cluster prefer solitary leisure activities, primarily within the confines of their home. They have the highest mean in Factor 3, which indicates a strong preference for passive leisure, possibly engaging in activities like reading or gardening, which do not require leaving home (Indicator 13: 0.7) or the company of others.

Cluster 4: The Active Sports Enthusiasts

Mean Values: High in Factor 1, moderate in Factor 2, low in Factors 3 and 4. Importance: Factor 1 is the most significant, with Factor 2 as a secondary influence. This cluster embodies an active and vigorous lifestyle, with members likely participating in daily sports activities (Indicator 8: 0.86) and competitive events on weekends (Indicator 9: 0.83). Their leisure time is characterized by high energy and regular engagement in physical activities, albeit with a moderate interest in spending time with dogs.

4.1. Clusters as predictors

We examined if cluster membership predicts the choice of means of transport (car, coach, train, plane, ship). Cluster membership significantly informs dog owners' preference for traveling by ship only. Cluster 2, dubbed "The Canine Companions," with members deeply invested in activities involving their dogs, is most likely to prefer this mode of travel, as evidenced by an odds ratio of 2.303 ($p = 0.003$). Other means of transport chosen to travel to the destination were not predicted significantly by any of the clusters. It was also tested whether the importance attributed to certain

topographical features of the destination (mountainous, waterfront, plain grassy terrain, forested terrain, rural area, resort area, urban area) was predicted by cluster membership. Members of Cluster 2 ("The Canine Companions") show a significantly higher likelihood of preferring mountainous terrains (Estimate = 1.393, $p < .000$, 95% CI [0.945, 1.840]), suggesting that destinations that offer opportunities for activities with dogs are particularly appealing to this group. In contrast, Cluster 1 ("The Outdoor Aficionados") displays a modest but statistically significant preference for mountainous destinations (Estimate = 0.495, $p = .013$, 95% CI [0.102, 0.889]), aligning with their high engagement in outdoor and nature-related activities. Cluster 3 ("The HomeCentered Solitudinarians"), characterized by a preference for passive and home-centered leisure activities, does not show a statistically significant preference for mountainous destinations (Estimate = 0.443, $p = .071$), which might be due to their inclination for comfort and solitude.

Thresholds for the preference levels indicate that as the preference for mountainous destinations increases, the distinction between clusters becomes more pronounced, especially transitioning from neutral (Level 3) to most preferred (Level 4), where there is a positive shift in the odds (from Estimate = 0.147 to 0.701).

Cluster membership plays a significant role in predicting dog owners' preferences for wooded destinations, according to regression analysis. In examining the parameter estimates, Cluster 2, identified as "The Canine Companions," is significantly more likely to choose wooded areas (Estimate = 1.332, $p < .000$, 95% CI [0.794, 1.871]), reflecting their preference for destinations that cater to activities with their dogs. Conversely, Cluster 3, "The HomeCentered Solitudinarians," exhibits a significant aversion to wooded destinations (Estimate = 0.887, $p < .001$, 95% CI [1.387, 0.387]), likely due to their predilection for home-based leisure activities. The thresholds for the preference levels show a clear demarcation, with significant negative estimates for the lower preference levels (woods = 1 and 2), and a nonsignificant estimate as preferences increase toward neutrality (woods = 4, $p = .060$). Cluster 1, "The Outdoor Aficionados," does not demonstrate a statistically significant preference for wooded destinations (Estimate = 0.076, $p = .723$). Cluster 4, "The Active Sports Enthusiasts," is the reference category and is inherently set to zero in the model.

In connection with grassy terrain there was only one significant predictor among the clusters. Cluster 3 ("The HomeCentered Solitudinarians") exhibits a significant negative preference towards field destinations (Estimate = 0.588, $p = .018$), aligning with their inclination towards indoor and solitary leisure activities, indicating that their preferences are significantly lower than those of the reference group for field destinations.

The ordinal regression analysis aimed to understand how cluster membership influences preferences for waterfront destinations among dog owners. Cluster 3, labeled as "The HomeCentered Solitudinarians," exhibits a significantly lower preference for waterfront destinations (Estimate = 1.496, $p < .000$, 95% CI [2.006, .985]), suggesting a marked aversion to such locations compared to the baseline group.

DISCUSSION

Our study embarked on an exploration of how dog ownership influences recreational activities and travel preferences. The significant enhancement in physical activity levels among dog owners, as reported in our results, echoes existing literature on the positive health impacts of dog ownership, including increased motivation for physical activity and social interactions (Scoresby et al., 2021). This synergy between dog ownership and an active lifestyle forms a foundational pillar for understanding the nuanced travel and leisure preferences observed among this demographic.

The strong preference for traveling with dogs, especially to natural destinations like forests and waterfronts, highlights a notable trend towards nature-centric tourism among dog owners. This preference not only reflects the desire for shared experiences with their canine companions but also underscores a broader societal shift towards outdoor and wellness-focused recreational activities (Chi et al., 2024). These insights are crucial for tourism operators aiming to cater to the dog owner market, suggesting a demand for destinations that offer both natural beauty and pet-friendly amenities.

The regression analysis proved that specific behaviors predict destination choices. The inclination towards new activities, cultural programs, and dog sports signifies a complex interplay of desires for exploration, cultural enrichment, and pet inclusion in travel experiences. This combination of interests offers a rich tapestry for tourism professionals to design experiences that cater to the active, culturally curious, and pet-inclusive traveler.

Moreover, the factor and cluster analyses provide a deeper understanding of the underlying motivations and preferences within the dog owner population (Glanville et al., 2020). The emergence of distinct clusters, such as the Outdoor Aficionados, Canine Companions, HomeCentered Solitudinarians, and Active Sports Enthusiasts, indicates the diversity within this demographic. These detailed insights are pivotal for developing targeted marketing strategies (Bednárová et al., 2018) and tourism products that resonate with each subgroup's specific interests and values. These clusters inform specific travel preferences connected to certain destination characteristics (Seddighi and Theocharous, 2002). For instance, the distinct preferences for mountainous and wooded destinations among different clusters highlight the importance of natural settings in leisure and travel decisions for dog owners.

Marketing strategies based on regression results

Adventure and culture combined packages: The regression results reveal a significant inclination towards new experiences and cultural enrichment among dog owners who also enjoy dog sports. Tourism packages (Buhalis and Chan, 2023) could be developed that offer a blend of adventure and cultural experiences. For instance, a weekend getaway could include dog agility courses set against the backdrop of historical sites or cultural festivals, allowing dog owners to engage in physical activities with their pets while absorbing the local culture.

Thematic dogfriendly accommodation: With dogfriendly accommodation being a priority, hotels and resorts could offer themed stays that cater to the canine companion. Packages might include dogwellness programs, with activities such as dog yoga, massage, and gourmet pet menus, ensuring that the dogs are just as pampered as their owners (Formenton et al., 2017). Such thematic stays could also offer training workshops, where owners learn alongside their dogs, fostering a shared learning experience.

Local programs with canine integration: Dog owners' interest in local programs and sports with their dogs suggests a market for communitybased tourism experiences (Teodorowicz and Woźniewicz Dobrzyńska, 2014). Tourism operators can collaborate with local sports clubs and cultural institutions to create events where dog participation is encouraged. For example, "Bark and Art" weekends could combine gallery visits with dogfriendly art sessions, and "Run with your Pup" events (Brown and Rhodes, 2006) could integrate pets into local races or charity runs.

Tailored marketing for clusterbased preferences

In crafting tailored marketing strategies (Tang et al., 2022) for the discerning dog owner tourist, it's imperative to integrate the nuanced insights derived from regression analysis and cluster identification. This approach not only caters to the unique preferences identified but also aligns with contemporary trends towards sustainability, authentic experiences, the wellbeing of pets and their owners and the overall satisfaction with the vacation (Kupi and Kórnives, 2023; Sugiyama et al., 2024). Expanding upon these strategies involves a deep dive into innovative, ecoconscious, and culturally rich offerings that resonate with each identified cluster.

The Outdoor Aficionados: Engaging this cluster requires an innovative blend of ecotourism and petfriendly experiences. Imagine offering "Biodiverse Trails" where tourists and their pets can participate in guided tours through conservation areas, contributing to local conservation efforts (Gelbert, 2004). Accommodations could be transformed into green sanctuaries, with ecolodges (Green et al., 2010) powered by renewable energy, organic pet food menus, and zerowaste policies. Furthermore, introducing "EcoChallenge Days" where pets and owners engage in outdoor activities that also educate them about local flora and fauna could add a unique dimension to their travel experience (Walsh, 2011).

The Canine Companions: For individuals deeply bonded with their pets, creating "Emotional Wellness Retreats" (Kelly and Smith, 2016) could offer a holistic approach to strengthening their relationship. These retreats could incorporate animalassisted therapy sessions, workshops on understanding canine emotions, and shared mindfulness activities such as "Doga" (dog yoga) (Winkle et al., 2020). Incorporating local cultural elements, such as traditional pet blessings or petcentric community events, can enrich these experiences, providing a deeper connection to the destination's heritage.

The HomeCentered Solitudinarians: Attracting this cluster necessitates creating serene, secluded experiences that promise relaxation for both the pet and the owner. "Private Sanctuary Stays" in petfriendly luxury accommodations with personalized pet services, from inroom dining to pet meditation sessions, can offer the ultimate escape (Hoy et al., 2023). Incorporating sustainable practices, such as organic pet spa products and ecofriendly pet toys, emphasizes a commitment to environmental stewardship while catering to their need for tranquility.

The Active Sports Enthusiasts: Captivating this cluster involves curating highenergy, petinclusive experiences that challenge and invigorate. "Adventure Boot Camps" that offer fitness challenges for owners and agility courses for dogs, set in breathtaking natural landscapes, can provide the thrill they seek. Seasonal offerings, like "Winter Woodland Sports", Dogsledging, with dogfriendly snowshoeing (Hudson, 2004) or "Summer Splash Adventures" with canine surf lessons, ensure yearround engagement, blending physical activity with the joy of discovery. Synchronizing cluster insights with sustainable and cultural marketing strategies Seasonal Celebrations of Nature and Pet Wellbeing: Crafting seasonal campaigns that celebrate the bond between nature, pets, and their owners can offer a fresh perspective on travel. Spring and autumn "EcoWellness Festivals," (Barrett et al., 2024) featuring workshops on sustainable pet care, ecofriendly pet products markets, and nature conservation activities, can attract environmentally conscious travelers across clusters.

Cultural immersion and community integration: Delving deeper into the local culture and economy, "Cultural Canine Caravans" could offer immersive experiences that introduce dog owners to local traditions, crafts, and cuisines, with a focus on pet inclusion. Collaborating with local artisans to create bespoke pet accessories, organizing petfriendly culinary tours, or hosting traditional pet parades can foster a genuine connection with the destination's cultural fabric (Glavočić, 2019).

Ecoinnovative accommodations and experiences: Pushing the envelope further, tourism operators could pioneer the development of "EcoPet Havens" – accommodations and experiences designed from the ground up to be sustainable and petfriendly (Alves et al., 2022). Utilizing green building techniques, renewable energy sources, and providing organic, locallysourced pet food options are ways to appeal to the environmentally conscious traveler, setting a new benchmark in petinclusive tourism (ÇavuGoğlu et al., 2020). This investigation into the interplay between dog ownership and travel preferences has illuminated the influence that pets have on the leisure activities and tourism behaviors of their owners. Through an indepth analysis encompassing recreational engagement, destination preferences, and the predictive power of leisure inclinations on travel choices, our study provides insights for the field of petinclusive tourism.

Our findings reveal a significant propensity among dog owners to integrate their pets into their leisure and travel activities, with a marked preference for destinations that cater to the needs and wellbeing of their canine companions. This trend not only highlights the growing importance of petfriendly amenities and experiences in the tourism industry but also underscores the potential for targeted marketing strategies that can attract this distinct demographic.

By leveraging the insights provided by this study, tourism professionals can seize the opportunity to innovate and cater to this market segment, ultimately enhancing the inclusivity and diversity of travel experiences available.

Looking ahead, further research in this area can expand our understanding of petinclusive tourism, exploring new trends, challenges, and opportunities that lie on the horizon.

CONCLUSION

This study has comprehensively explored the intricate relationship between dog ownership and travel preferences, focusing on Hungarian dog owners as a case study. The findings highlight a significant enhancement in physical activity levels among dog owners, with 55.6% of respondents indicating increased physical activity due to their pets. This aligns with broader trends linking dog ownership to higher physical activity and improved health outcomes.

A substantial 79% of dog owners prefer vacationing with their dogs, particularly favoring natural destinations such as forests and waterfronts. This trend underscores a growing preference for naturecentric tourism, which aligns with the broader societal shift towards outdoor and wellnessfocused recreational activities. Urban residents, especially those from the capital, show a higher frequency of trips with their dogs, primarily using car travel, which reflects the convenience and flexibility required for traveling with pets.

The logistic regression analysis provided deeper insights into the specific leisure behaviors that predict destination choices among dog owners. A notable inclination towards new activities, cultural programs, and dog sports was found to significantly increase the likelihood of selecting destinations offering these features. For instance, dog owners interested in new activities were significantly more likely to choose destinations with dog sports facilities (OR = 3.004, $p = 0.008$). Similarly, cultural programs emerged as significant predictors, highlighting the multifaceted interests of dog owners that combine cultural enrichment with petrelated activities.

Factor and cluster analyses further refined our understanding of the diverse motivations and preferences within the dog owner population. The identification of distinct clusters—Outdoor Aficionados, Canine Companions, HomeCentered Solitudinarians, and Active Sports Enthusiasts—revealed varied preferences for destination characteristics. For example, the Canine Companions cluster showed a strong preference for mountainous and wooded areas, reflecting their desire for engaging activities with their pets in natural settings.

These findings have significant implications for tourism professionals. By understanding the specific needs and preferences of dogowning travelers, destinations can develop targeted marketing strategies and innovative tourism products. For instance, creating adventure and culture combined packages can appeal to dog owners seeking both physical activities and cultural experiences. Thematic dogfriendly accommodations and local programs integrating canine activities can further enhance the appeal of destinations to this demographic.

Moreover, the study suggests that marketing strategies should be tailored to the identified clusters. For Outdoor Aficionados, ecotourism and petfriendly experiences can be particularly appealing, while Canine Companions might be attracted to emotional wellness retreats that strengthen the bond between pets and owners. HomeCentered Solitudinarians may prefer serene, secluded experiences, and Active Sports Enthusiasts might be drawn to highenergy, petinclusive activities.

In summary, this investigation into the leisure and travel behaviors of dog owners highlights the growing importance of petinclusive tourism. The study provides valuable insights for tourism operators to innovate and cater to the unique needs of this market segment. By leveraging these insights, the tourism industry can enhance the inclusivity and diversity of travel experiences available, ultimately attracting a broader and more loyal customer base. Looking ahead, further research is needed to expand our understanding of petinclusive tourism, exploring new trends, challenges, and opportunities. This will ensure that the tourism industry remains responsive to the evolving needs of dog owners and continues to provide enriching and inclusive travel experiences for all.

LIMITATION OF THE RESEARCH

We inquired about the leisure activities and travel habits that individuals engaged in with their dogs. It is important to note that the sample composition may be subject to distortion, as individuals who lack interest in their dogs are more likely to refrain from admitting it in a questionnaire. Moreover, those who do not have an inherent interest in dogrelated topics may be less inclined to participate in a dogthemed questionnaire, potentially leading to nonresponse bias. Consequently, the respondents were expected to predominantly consist of individuals who view dogs as companions and hold their role in high regard within their value system, as evidenced by their engagement in leisure activities.

The questionnaire relied on selfreport measures, introducing the possibility of response bias due to the accuracy with which respondents recall specific leisure activities and travel habits. The crosssectional design employed restricts our ability to analyse behavioural patterns over an extended period and establish causal relationships. Secondly, it is important to acknowledge the inherent limitations associated with online survey data collection, which may impact the representativeness and generalizability of the findings even if the proportions of settlement types in the sample mirrors national proportions. Future research endeavours should take these limitations into account and further explore these aspects to gain a comprehensive understanding of the topic at hand.

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