ESTUDO DE CASO / CASE STUDY / ANÁLISIS DE CASO

ENVIRONMENTALLY RESPONSIBLE BEHAVIOR OF TOURISTS IN COGNITIVE, AFFECT AND ATTITUDE ASPECTS: AN INTEGRATED APPROACH TO SUSTAINABLE TOURISM DESTINATION

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Abstract

In this research environmental responsible behaviors of tourists visiting sustainable tourism destinations are examined. The process of "cognition-affection-attitude-behavior" is examined in the study. Cognition refers to environmental knowledge, affection refers to environmental sensitivity, attitude refers to place attachment and behavior refers to *Environmentally Responsible Behavior* (ERB). 233 tourists visiting Trabzon's Uzungöl destination were included in the research. Structural equality model is used in the Smart PLS program to explore the relationship between variables. The results point that sustainable development knowledge has no effect on environmental sensitivity, but environmental protection knowledge positively affects environmental sensitivity. In addition, it has been determined that environmental sensitivity positively affects place identity and place dependence. Finally, place dependence positively affects general ERB and specific ERB. However, while place identity positively affects the general ERB, it does not have a significant effect on the specific ERB. The results of the research reveal the importance of activities that increase the level of environmental knowledge for sustainable tourism destinations. In addition, in-service training for tour guides and tourism managers is expected to be beneficial.

Key words: Environmentally Responsible Behavior; Environmental Knowledge; Environmental Sensitivity; Place Attachment; Sustainable Tourism.

COMPORTAMENTO AMBIENTALMENTE RESPONSÁVEL DOS TURISTAS NOS ASPECTOS COGNITIVOS, AFETIVO E ATITUDINAL: UMA ABORDAGEM INTEGRADA PARA DESTINOS TURÍSTICOS SUSTENTÁVEIS

Resumo

Nesta pesquisa são examinados os comportamentos ambientais responsáveis dos turistas que visitam destinos turísticos sustentáveis. O estudo examina o processo de "cognição-afeto-atitude-comportamento". A cognição se refere à consciência ambiental, o afeto se refere à sensibilidade ambiental, a atitude se refere ao apego ao lugar e o comportamento se refere ao *Comportamento Ambientalmente Responsável* (CAR). A pesquisa baseou-se em 233 turistas entrevistados visitando o destino Uzungöl de Trabzon. O modelo de igualdade estrutural é usado no programa Smart PLS para explorar a relação entre as variáveis. Os resultados indicam que o conhecimento do desenvolvimento sustentável não tem efeito sobre a sensibilidade ambiental, mas o conhecimento da proteção ambiental afeta positivamente a sensibilidade ambiental. Além disso, descobriu-se que a sensibilidade ambiental afeta positivamente a identidade e a dependência do local. Finalmente, a dependência do lugar afeta positivamente o CAR geral e o CAR específico. No entanto, embora a identidade do site afete positivamente o CAR geral, ela não tem um efeito significativo no CAR específico. Os resultados da pesquisa revelam a importância de atividades que aumentem o nível de consciência ambiental para destinos turísticos sustentáveis. Além disso, espera-se que o treinamento em serviço para guias turísticos e gerentes de turismo seja benéfico.

Palavras-chave: Comportamento Ambientalmente Responsável; Conhecimento Ambiental; Sensibilidade Ambiental; Apego ao Lugar; Turismo Sustentável.

COMPORTAMIENTO AMBIENTALMENTE RESPONSABLE DEL TURISTA CON RELACIÓN A ASPECTOS COGNITIVOS, AFECTOS Y DE ACTITUDES: UN ENFOQUE INTEGRADO AL DESTINO TURÍSTICO SOSTENIBLE

Resumen

En esta investigación se examinan los comportamientos ambientales responsables de los turistas que visitan destinos turísticos sostenibles. En el estudio se examina el proceso de "cognición-afecto-actitud-comportamiento". La cognición se refiere al conocimiento ambiental, el afecto se refiere a la sensibilidad ambiental, la actitud se refiere al apego al lugar y el comportamiento se refiere al *Comportamiento Ambientalmente Responsable* (CAR). Se incluyeron en la investigación 233 turistas que visitaban el destino Uzungöl de Trabzon. El modelo de igualdad estructural se utiliza en el programa Smart PLS para explorar la relación entre variables. Los resultados señalan que el conocimiento del desarrollo sostenible no tiene ningún efecto sobre la sensibilidad ambiental, pero el conocimiento de la protección ambiental afecta positivamente la sensibilidad ambiental. Además, se ha determinado que la sensibilidad ambiental afecta positivamente la identidad del lugar y la dependencia del lugar. Finalmente, la dependencia del lugar afecta positivamente al CAR general y al CAR específico. Sin embargo, aunque la identidad de lugar afecta positivamente al CAR general, no tiene un efecto significativo en el CAR específico. Los resultados de la investigación revelan la importancia de las actividades que aumentan el nivel de conocimiento ambiental para los destinos turísticos sostenibles. Además, se espera que la capacitación en el servicio para guías turísticos y gerentes de turismo sea beneficiosa.

Palabras clave: Comportamiento Ambientalmente Responsable; Conocimiento Ambiental; Conciencia Ambiental; Apego al Lugar; Turismo Sostenible.

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1 INTRODUCTION

In today's world, ensuring sustainability in the tourism sector has become one of the important issues. A number of measures have been proposed to prevent nature from being destroyed over time (water and energy saving, recycling). In addition to these measures, the government campaigns have been organized to create consumer awareness. Environmentalist actions have been taken to help tourists recultivate environmental behavior in destinations visited (Sabır, 2019; Olcar, 2020; Perinotto & Sousa, 2020).

It has also been worked out to clarify the causes of the behavior of tourists through scientific studies. In the process of time, consumer groups that exhibit environmentally sensitive attitudes have come into existence. These groups have encouraged people to exhibit environmental behavior. All these actions have been carried out to ensure the sustainability of natural areas. The world tourism organization has taken a supportive stance on these efforts by declaring 2017 the year of "sustainable tourism".

It is possible to come across many studies in the field that studying the tourists responsible behaviors for the environment since the previous years. In research, the behaviors of tourists responsible for the environment have examined through variables such as environmental attitudes (Zheng et al., 2018), environmental knowledge (Kim & Stepchenkova, 2020), environmental anxiety (Huang & Liu, 2017), environmental values (Bie & Xu, 2018) and ecological worldview (Moghimehfar, Halpenny & Harshaw, 2020).

But, there seems to be a general lack of understanding of the influence of knowledge and sensitivity on ERB. To address this deficiency, Cheng & Wu (2015) have explained ERB through environmental knowledge, environmental sensitivity, and place attachment. The comprehension of the cognitive, emotional and attitude vary process is needed to find out the underlying decision-making process of environmentally responsible behaviors (Kement & Bükey, 2020). Therefore, a holistic approach has been adopted in the research.

In this study, the "cognition-affection-attitude-behavior" (Fishbein & Manfredo, 1992) model have been used to understand the ERB. This model, which was used by Cheng & Wu (2015) to understand sustainable island tourism activities, have been used to explain sustainable tourism in Uzungöl, one of the important ecotourism destinations in Turkey.

Uzungöl has started to develop in ecotourism activities since the 2000s. After 20 years, it has become recognized by many countries around the world. Therefore, it can be expressed as one of the important ecotourism destinations of Turkey (Alptekin, 2017). Uzungöl homes too many wild animals, while it has various endemic plant species. Uzungöl is an important destination that needs to be protected due to its ecological diversity. That is the reason why it was declared a nature park (Uzungol Tabiat, 2020).

In addition, Uzungöl is a destination where natural disasters such as landslides and landslides can occur. Therefore, it needs to be made available with a planning that will not be environmentally damaged. In this context, it was declared a special environmental protection zone in 2004 by The Ministry of Environment and Urban Planning.

In this research, tourists visiting Uzungöl and having extensive environmental knowledge are expected to have high environmentally sensitivity. This sensitivity can be thought to create a commitment in tourists to the place they visit. It is thought that place attachment will ensure responsible behavior to the environment.

In summary, the environmentally responsible behavior of tourists visiting Uzungöl is examined within the scope of the "cognition-affection-attitude-behavior" model. In the field, the fact that Uzungöl was not examined with this model in the context of sustainable tourism behaviors makes the research unique.

2 THEORETICAL REVIEW

Fishbein & Manfredo (1992) discussed the "cognition-affection-attitude-behavior" process for the disclosure of behavioral intention. Therefore, in order to understand the environmentally responsible behavior, it is necessary to explain the "cognition" process firstly.

According to Folkes (1988), cognition is a type of direct experience or knowledge and perception of subjects after the integration of information acquired by different channels. Knowledge is an important issue for changing human behavior and ensuring diversity (Boerschig & De Young, 1993).

Therefore, the perception that people acquire through cognition constitutes environmental knowledge. Environmental knowledge reflects the degree of concern regarding issues in physical environments (Amyx, DeJong, Lin, Chakraborty, & Wiener, 1994).

Kaiser & Fuhrer (2003) say environmental information is important in the realization of environmentally responsible behaviors. Abdullah et al., (2019) tourists with high environmental knowledge are oriented to protect the environment. All this data indicates that individuals with high levels of ecological knowledge will be more respectful to the environment. In other words, environmental sensitivity is expected to occur as a result of environmental knowledge.

Environmental knowledge is expressed as a feature gained by environmental education. (Marcinkowski & Rehring, 1995). In addition, it has been examined on topics such as environmental science, ecology and environmental issues Cheng & Wu (2015) examined environmental knowledge as two sub-dimensions.

In this research, environmental knowledge is considered as two sub-dimensions: sustainable development and environmental protection. Sustainable development can be explained as individuals know what they need to do in order to transfer the environment to future generations. Environmental protection describes individuals' knowledge of protecting the environment as a result of the training they receive about the environment and the experience it has gained in the environment.

Nystrom (2008) found that the level of knowledge of students affects their sensitivity levels. Cheng and Wu (2015) indicate that the environmental knowledge level of tourists affects their environmental sensitivity. Also Fishbein & Manfredo (1992) express that knowledge affects sensitivity (affection) in the "cognition-affection-attitude-behavior" model.

Wurzinger & Johansson (2006) claim that individuals with high levels of environmental knowledge will have more environmental sensitivity about the destination visited. Based on all this information, the following hypothesis is included in the research:

H1a: Sustainable development knowledge has a significant impact on environmental sensitivite.

H1b: Environmental protection knowledge has a significant impact on environmental sensitivite.

Environmental sensitivity is an individual's affective characteristic to perceive environments with empathy (Peterson, 1982). Bagozzi, Gopinath, & Nyer (1999) emphasized that affection is a type of psychological feeling that represents environmental sensitivity, which generates inner environmental concern.

Therefore, emotional formation of individuals is important in the formation of environmental sensitivity. Chawla (1998) defined environmental sensitivity as "a predisposition to take an interest in learning about the environment, feeling concern for it, and acting to conserve it, on the basis of formative experiences".

Likewise, Cheng & Wu (2015) argue that environmental sensitivity stems from a deep and meaningful knowledge of the environment and one's appreciation, care of, and empathy towards it.

Place attachment is an affective bond or link between people and specific places (Hidalgo &

Hernandez, 2001). In other words, place attachment is that individuals have a positive feeling towards a particular place (Giuliani, 2003).

Affection refers to individuals' favor, appreciation, and concern for the environment (Cheng & Wu, 2015). The influence of effect on consumers' psychological functioning and behavior is quite pervasive, though it is often undramatic and sometimes subtle enough to be unrecognized (Cohen & Areni, 1991). Attitude is subjective cognition and evaluation of an individual's specific behavior (Ajzen, 1985). Therefore, place attachment refers to the attitude of research.

Leisure researchers study place attachment primarily as a psychological element of recreation experiences (Williams, 2002). Also, the construct has typically been described as having two distinct dimensions: place identity, which refers to a symbolic or affective attachment to a place, and place dependence, which refers to a functional attachment to a place (Backlund & Williams, 2003).

Place dependence reflects how well a location facilitates users' particular activities, as well as the importance of a place in meeting the functional goals of individuals (Moore & Graefe, 1994).

Place identity, denotes an important substructure of self-identity and a critical symbolic link between a person and a location (Williams & Vaske, 2003).

Environmental sensitivity has been seen as an emotional component. In tourism researches place involvement is considered as an antecedent of place attachment.

Place involvement is explained to a place as an individual emotional commitment and sense of belonging.

Environmental sensitivity represents sense of belonging as in place involvement.

In broader terms, individuals can also develop a commitment to the destination when they respect the destination they visit. Cheng & Wu (2015) says environmental sensitivity affects place identity and place dependence. In the light of all this information, the following hypotheses have been developed.

H2a: Environmental sensitivity has a significant impact on place identity.

H2b: Environmental sensitivity has a significant impact on place dependence.

The fact that people are not sensitive to the environment has created environmental problems over time. It is observed that people must have environmental sensitivity to address these problems (Minderman et al., 2009). Knowledge levels of individuals about the environment are still important in

the formation of environmental responsible behavior (ERB) (Zareie & Navimipour, 2016). Cottrell & Graefe (1997), suggest that environmentally responsible behavior includes environmental concern, commitment, and ecological knowledge.

Lee (2011) describes environmentally responsible actions as protecting resources, protecting the environment and ensuring the sustainability of natural resources.

Stern (2000) analyzed the environmentally sensitive behavior in three sub-dimensions as environmental activism, non-activist behaviors in the public sphere and private field environmentalism. Issues such as recycling, water and energy saving and waste management are examples of environmentally sensitive behaviors.

Cheng & Wu (2015) have examined environmentally responsible behavior in two dimensions, general and private. While general behaviors explain the individual's behavior indirectly to protect the environment, particular behaviors refer to environmental protection behaviors that the individual can do directly.

Bricker & Kerstetter (2000) means that individuals can be committed to a destination or place. Yüksel et al., (2010) similarly expresses that people are committed to the destination. When the field is examined, in many studies (Ramkissoon, Weiler & Smith, 2013; Loureiro, 2014) have revealed that the place attachment has an impact on the occurrence of environmentally responsible behavior.

Cheng & Wu (2015) claim that the impact of the place attachment in the development of environmental responsible behavior. In addition, it has found out that place attachment affects the environmental responsible behavior in many studies such Lee (2011), Halpenny (2010), Scannel & Gifford (2010), Chow et al., (2019).

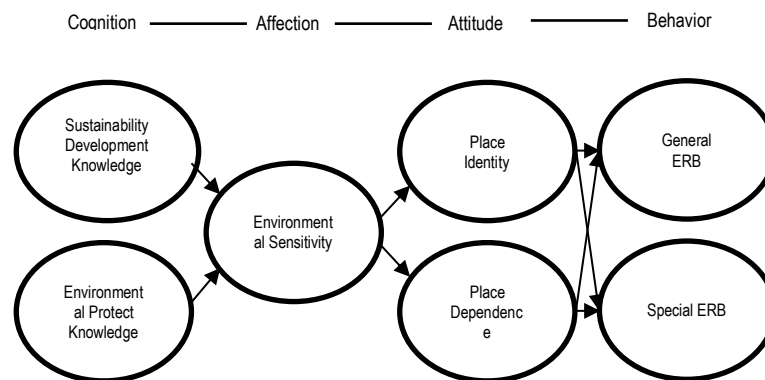In this study, the following hypotheses were included based on the field;

H3a: Place identity has a significant impact on general ERB

H3b: Place dependence has a significant impact on general ERB

H4a: Place identity has a significant impact on specific ERB

H4b: Place dependence has a significant impact on specific ERB.

Figure 1: Research Model

Source: own elaboration.

3 METHODOLOGY

Data was collected from 233 tourists who visited the Trabzon Uzungöl destination. Convenience sampling method was used as data collection method. Questionnaire data was collected between 10 February 2020 and 10 March 2020. After the questionnaire was translated from English to Turkish, it was translated back into Turkish to determine whether there was a shift in meaning.

Smart PLS statistic program is used in this research. The main purpose of using the Smart (PLS-SEM) statistical program is to provide all the data in the scale evaluation process simultaneously. Structural equation modeling (SEM) was applied to the research model in the Smart PLS statistical program. With SEM, the relationship between the observed and unobserved variables and the model suitability can be tested.

The analysis was performed using the partial least squares method in the Smart PLS-SEM statistical program (Hair et al., 2019). PLS-SEM is more advantageous in explaining complex structures in models (Nitzl, 2016; Ali et al., 2018; Uşaklı & Küçükergin, 2018).

The PLS-SEM method has a structure that can combine multiple regression and basic statistical analyzes and generalize values (Abdi, 2003). It performs variance-oriented calculations. It also gives the validity and reliability values together when the model is run. Normal distribution is not evaluated in analyzes made in the Smart (PLS-SEM) statistical program (Wong, 2013).

The research model was prepared based on the studies of Cheng & Wu (2015). The questionnaire form consists of two parts. The first part consists of questions regarding the demographic characteristics of the respondents like gender, age and education.

The second part consists of 9 items to analyze environmental knowledge which were adapted by Haron, Paim & Yahaya (2005) (*e.g., I know that for the next generation, we should protect the natural resources of Uzungöl*), 4 items to analyze environmental sensitivity which were adapted by Daniel (2002) (*e.g., I enjoy natural environments, I appreciate the natural environment of Uzungöl*), 8 items to analyze place attachment which were adapted by Williams & Roggenbuck (1989) (*e.g., have a strong sense of identifying with Uzungöl, No other tourism locations can replace the tourism of Uzungöl*) and 8 items to analyze environmentally responsible behavior which were adapted by Smith-Sebasto & D'Costa (1995) (e.g., try to solve the environmental problems in Uzungöl, I pick up trash and branches when I see them on the place).

The items used to evaluate the questions in the second part were adapted to 5-point scale format and were directed to the respondents in the range of "strongly disagree-strongly agree" (1-5).

4 ANALYSIS AND DISCUSSION

4.1 Profile of respondents

The proportion of male and female respondents was 63% and 37% respectively, most respondents (27%) were aged 25-34, and university graduates predominated (42.0%). The proportion of married and single respondents was 67% and 33% respectively. Also most respondents were local tourist (%64) and high income (%25). Lastly respondents stated that they travel to Uzungöl first times (%66) and second times (%22) respectively (Table 1).

Table 1. Demographic profile of the respondents

Variable		N	%
Gender	Female	86	36.9
	Male	147	63.1
Nationality	Turkey	148	63.9
	Others	84	36.1
Marital status	Single	77	33.0
	Married	156	67.0
Previous visit	1	154	66.1
	2	51	21.9
	3-5	21	9.0
	5≤	7	3.0
Age (years)	18≥	5	2.1
	18-24	16	6.9
	25-34	64	27.5
	35-44	47	20.2
	45-54	43	18.5
	55-64	37	15.9
	65≤	21	9.0
Income	Very low	40	17.2
	Low	55	23.6
	Medium	53	22.7
	High	59	25.3
	Very high	26	11.2
Education level	Primary education	13	5.6
	High school	52	22.3
	Associate degree	55	23.6
	Bachelor's degree	98	42.1
	Master's degree/Ph.D.	15	6.4

Source: own elaboration.

4.2 Measurement model

Construct, convergent and discrimination validity analyzes were conducted to determine the validity of the scales. AVE square root (Fornell & Larcker, 1981) and Heterotrait-Monotrait Ratio (HTMT) were examined to calculate discriminant validity (Hair et al., 2019). Each of the AVE square root values is higher than the correlation coefficients between scales (Table 2). Also, heterotrait-monotrait ratio values (Table 3) were higher than the minimum criterion 0.9 (Henseler, Ringle, & Sarstedt, 2015). These results confirmed the sufficient level of discriminant validity of the measurement model.

Table 1: Discriminant validity, means and standard deviation

Constructs		Mean	SD	1	2	3	4	5	6	7
1	Environmental sensitivity	3.95	0.923	**0.860**						
2	Environmental protection	3.96	0.897	0.754	**0.836**					
3	General behavior	4.03	0.888	0.457	0.442	**0.815**				
4	Specific behavior	4.05	0.998	0.345	0.288	0.705	**0.827**			
5	Sustainable development	3.88	0.969	0.552	0.688	0.328	0.177	**0.824**		
6	Place identity	3.95	1.040	0.564	0.474	0.729	0.602	0.407	**0.821**	
7	Place dependence	3.57	1.130	0.736	0.617	0.580	0.419	0.458	0.682	**0.868**

Note: The numbers in bold indicate the square root values of AVE., p=<0,001.
Source: own elaboration.

Composite reliability (CR) and average explained variance (AVE) were examined (Hair, Sarstedt, Ringle, & Mena, 2012) to calculate the convergent validity and it was concluded that the scales were above 0.50 in both analyzes. As the ideal VIF values among the variables are below the threshold value between 5-10 (Smith et al., 2020), it has been confirmed that the indicators have the expected VIF values in the structural model and do not have a multicollinearity problem (Table 4).

Table 2: Heterotrait-Monotrait Ratio

Constructs		1	2	3	4	5	6	7
1	Environmental sensitivity	-						
2	Environmental protection	0,846	-					
3	General behavior	0,522	0,510	-				
4	Specific behavior	0,397	0,328	0,831	-			
5	Sustainable development	0,634	0,788	0,387	0,203	-		
6	Place identity	0,653	0,547	0,861	0,703	0,480	-	
7	Place dependence	0,828	0,689	0,663	0,466	0,524	0,788	-

Source: own elaboration.

In order to determine the reliability of the scales, Cronbach Alpha values were examined (Hair et al., 2010) and it was determined that the reliability coefficient of each scale was above 0.70 (Table 4).

Table 4. t-value, variance inflation factor, composite reliability, average variance extracted and cronbach alpha

Variables	λ	t-value	VIF	CR	AVE
Environmental knowledge (EnvK)					
Sustainable development knowledge (SDK) (α=0.84)				0.89	0.67
I know that the maintenance of ecological balance will enhance the sustainable development of Uzungöl.	0.874	38.886	3.040		
I know that for the next generation, we should protect the natural resources of Uzungöl.	0.799	26.923	1.869		
I know that the maintenance of diversity of species on Uzungöl will balance the ecology.	0.787	24.372	2.415		
I know that extensive development of natural resources will consume the Uzungöl.	0.832	39.757	1.811		
Environmental protection knowledge (EPK) (α=0.89)				0.92	0.69
I know that excessive recreational activities will damage environments of Uzungöl.	0.848	37.452	3.706		
I know that carbon dioxide emissions by automobiles and motorcycles will pollute the Uzungöl.	0.824	39.931	2.479		
I know that over extensive tourism development will sacrifice natural resources and environments.	0.832	35.113	4.416		
I know that, in the trip, the use of green tableware. such as bowls and chopsticks will avoid damage to the environment	0.787	32.729	2.277		
I know that the use of public transportation or biking can avoid air pollution.	0.885	56.149	3.146		
Environmental sensitivity (EnvS) (α=0.88)				0.91	0.73
I enjoy natural environments.	0.885	51.597	3.028		

	λ	VIF		CR	AVE
I am concerned about the ecological preservation in Uzungöl.	0.839	48.528	2.208		
I appreciate the natural environment of Uzungöl	0.852	43.643	2.734		
I care about the impact of my living habits on the natural environments of Uzungöl.	0.863	53.256	2.354		
Place Attachment (PAttc)					
Place identity (PIden) (α=0.89)				0.92	0.75
Touring Uzungöl has a deep meaning for me	0.844	34.413	2.262		
I have a strong sense of identifying with Uzungöl.	0.870	50.597	2.572		
I have a strong sense of belonging in regard to Uzungöl.	0.889	53.940	3.142		
I have special feelings for the Uzungöl and the tourists.	0.869	54.445	2.728		
Place dependence (PDep) (α=0.83)				0.89	0.67
I enjoy traveling in Uzungöl more than other tourism destinations.	0.799	22.719	1.938		
I am more satisfied with traveling in Uzungöl than other tourism destinations.	0.794	29.823	1.807		
It is more important to visit Uzungöl than other tourism destinations.	0.824	35.258	2.123		
No other tourism locations can replace the tourism of Uzungöl.	0.866	57.124	2.250		
Environmentally responsible behavior (ERB)					
General behavior (α=0.83) (GBhv)				0.88	0.66
I try to solve the environmental problems in Uzungöl.	0.828	27.010	2.055		
I read the report, advertising, and books related to the environments of Uzungöl.	0.834	43.572	2.000		
I discuss with others about environmental protection of Uzungöl.	0.760	21.590	1.818		
I try to convince companions to adopt positive behaviors in the natural environments of Uzungöl.	0.837	41.008	2.033		
Special behavior (SBhv) (α=0.84)				0.89	0.68
When I see others' inadequate environmental behavior in Uzungöl, I will report it to the authorities.	0.869	46.278	2.385		
According to the law, I will deter any behavior damaging the environment of Uzungöl.	0.842	38.661	1.901		
I pick up trash and branches when I see them on the destination.	0.741	22.870	1.821		
I participate in activities to clean the destination (such as picking up trash).	0.849	40.657	1.949		

* *Measured using a 5-point scale format (1=strongly disagree, 3=neutral, 5=strongly agree).*
* *λ=Factor loadings, VIF=Variance inflation factor, CR=Composite reliability, AVE=Average variance extracted, α=Cronbach Alpha.*
Source: own elaboration.

4.3 Hypothesis testing

The research model had a good fit to the data. To evaluate the quality of the structural model, the coefficient of determination (R^2), effect size (f^2) (Lim et al., 2019) and predictive relevance (Q^2) are reported. The predictive relevance was evaluated using Stone-Geisser's Q^2 (Geisser, 1974; Stone, 1974).

The Q^2 values for environmental sensitivity (0.415), place identity (0.404), place dependence (0.210), general environmentally responsible behavior (0.353) and specific environmentally responsible behavior (0.240) are greater than 0, indicating the presence of model's predictive relevance.

As shown in Table 5, sustainable development knowledge and environmental protection knowledge explained 0.57% of the total variance of environmental sensitivity.

Environmental sensitivity accounted for 0.54% of the total variance of place identity and 0.31% of the total variance of place dependence, respectively. Also place identity and place dependence accounted for 0.54% of the total variance of general ERB and 0.35% of the total variance of special ERB, respectively.

In terms of effect size, EPK (f^2=0.622) is deemed the most important predictor of EnvS, while SDK (f^2=0.005) has not affected to EnvS. EnvS is deemed the important predictor of PIden (f^2=1.181) and PDep (f^2=0.465), respectively. PDep (f^2=0.458) is deemed the most important predictor of GBhv, while PIden (f^2=0.029) carry a small but meaningful effect.

Lastly, PDep (f^2=0.294) is deemed the most important predictor of SBhv, while PIden (f^2=0.000) has not affected to SBhv.

Table 5. Structural estimates (hypotheses testing)

|	Hypothesis	Std ß	SD	t-value	p-value	R^2	Q^2	f^2	Decision
H_{1a}	**SDK ⋙EnvS**	0.062	0.055	1,141	0,254	0.571	0.415	0.005	Not *accepted*
H_{1b}	**EPK ⋙EnvS**	0.712	0.051	13,888	***			0.622	*Accepted*
H_{2a}	**EnvS ⋙PIden**	0.736	0.031	24,044	***	0.541	0.404	1.181	*Accepted*
H_{2b}	**EnvS ⋙PDep**	0.564	0.049	11,388	***	0.318	0.210	0.465	*Accepted*
H_{3a}	**PIden ⋙GBhv**	0.156	0.058	2,677	0,008*	0.542	0.353	0.029	*Accepted*
H_{3b}	**PDep ⋙GBhv**	0.624	0.053	11,842	***			0.458	*Accepted*
H_{4a}	**PIden ⋙SBhv**	0.010	0.070	0,143	0,887	0.355	0.240	0.000	Not *accepted*
H_{4b}	**PDep ⋙SBhv**	0.593	0.066	9,034	***			0.294	*Accepted*

Source: own elaboration. (*** p= <0.001, * p= <0.01).

The results of the path analysis have been estimated (Table 5). Sustainable development knowledge ($ß_{SDK-EnvS}$=0.062, t=1.141, p<0.01) has not a significantly positive effect on EnvS. So, the H_{1a} hypothesis is not accepted. Environmental protection knowledge ($ß_{EPK-EnvS}$=0.712, t=13.888, p<0.01) has a significant and positive effect on EnvS. Hence, the H_{1b} hypothesis is accepted.

Environmental sensitivity ($ß_{EnvS-PIden}$=0.736, t=24.044, p<0.01) has a significant and positive effect on PIden. For this reason, H_{2a} hypothesis is accepted. Also, environmental sensitivity ($ß_{EnvS-PDep}$=0.564,

t=11.388, p<0.01) has a significant and positive effect on PDep. Therefore, H_{2b} hypothesis is accepted. Place identity ($ß_{PIden-GBhv}$=0.156, t=2.677, p<0.01) and place dependence ($ß_{PDep-GBhv}$=0.624, t=11.842, p<0.01) have significant and positive effect on GBhv.

Thus, H_{3a} and H_{3b} hypotheses are accepted. On the other hand, Place identity ($ß_{PIden-SBhv}$=0.010, t=0.143, p<0.01) has not a significant and positive effect on SBhv. So, H_{4a} hypothesis is not accepted. Finally, place dependence ($ß_{PDep-SBhv}$=0.593, t=9.034, p<0.01) has a significantly positive effect on SBhv and therefore the H_{4b} hypothesis is accepted.

Figure 2: Estimates of the structural model
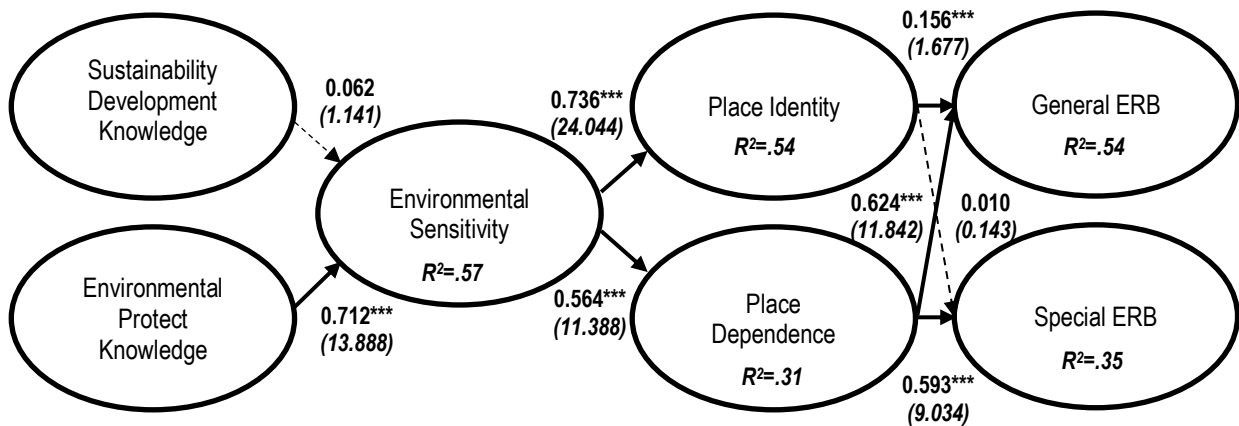
* Standardized coefficient (t-value), bold line= significant path, dashed line= not significant path.
* Goodness-of-fit index = χ2 = 1116.321, NFI=0.77, SRMR=0.05
Source: own elaboration.

4.3 Indirect and total effects

Sustainable development knowledge has not indirectly affected positively to place identity ($ß_{SDK-EnvS-PIden}$=0.045, t=1.074, p<0.05) and place dependence ($ß_{SDK-EnvS-PDep}$=0.034, t=1.055, p<0.05) when mediated by environmental sensitivity. Sustainable development knowledge has not indirectly affected positively to GBhv ($ß_{SDK-EnvS-PIden-GBhv}$=0.007, t=0.922, p<0.01) when mediated by environmental sensitivity and place identity.

Also, Sustainable development knowledge has not indirectly affected positively to GBhv ($ß_{SDK-EnvS-PDep-GBhv}$=0.021, t=1.051, p<0.05) when mediated by environmental sensitivity and place dependence. Sustainable development knowledge has not indirectly affected positively to SBhv ($ß_{SDK-EnvS-PIden-SBhv}$=0.000, t=0.074, p<0.05) when mediated by environmental sensitivity and place identity.

Also, Sustainable development knowledge has not indirectly affected positively to SBhv ($ß_{SDK-EnvS-PDep-SBhv}$=0.020, t=1.050, p<0.01) when mediated by environmental sensitivity and place dependence.

Environmental protection knowledge has indirectly affected positively to place identity ($ß_{EPK-EnvS-PIden}$=0.525, t=11.501, p<0.01) and place dependence ($ß_{EPK-EnvS-PDep}$=0.402, t=8.638, p<0.01) when mediated by environmental sensitivity.

Moreover, environmental protection knowledge has indirectly affected positively to GBhv ($ß_{EPK-EnvS-PIden-GBhv}$=0.081, t=2.328, p<0.05) when mediated by environmental sensitivity and place identity.

Environmental protection knowledge has indirectly affected positively to GBhv ($ß_{EPK-EnvS-PDep-GBhv}$=0.251, t=7.185, p<0.01) when mediated by environmental sensitivity and place dependence. Environmental protection knowledge has not indirectly affected positively to SBhv ($ß_{EPK-EnvS-PIden-SBhv}$=0.004, t=0.098, p<0.05) when mediated by environmental sensitivity and place identity.

However, Environmental protection knowledge has indirectly affected positively to SBhv ($ß_{EPK-EnvS-PDep-SBhv}$=0.239, t=5.878, p<0.01) when mediated by environmental sensitivity and place dependence.

Environmental sensitivity has indirectly affected positively to GBhv ($ß_{EnvS-PIden-GBhv}$=0.114, t=2.403,

$p<0.05$) when mediated by place identity. Also, environmental sensitivity has indirectly affected positively to GBhv ($\text{ß}_{\text{EnvS-PDep-GBhv}}$=0.352, t=8.661, $p<0.01$) when mediated by place dependence. Environmental sensitivity has not indirectly affected positively to SBhv ($\text{ß}_{\text{EnvS-PIden-SBhv}}$=0.005, t=0.099, $p<0.01$) when mediated by place identity.

On the contrary, environmental sensitivity has indirectly affected positively to SBhv ($\text{ß}_{\text{EnvS-PDep-SBhv}}$=0.335, t=6.684, $p<0.01$) when mediated by place dependence.

Environmental protection knowledge was a significant predictor of environmental sensitivity, place identity, place dependence and ERB.

Also, environmental sensitivity was a significant predictor of place identity, place dependence and ERB. Because both exogenous (except for sustainable development knowledge) and endogenous variable affected the dependent variables both directly and indirectly (Table 6).

Table 6. The direct, indirect and total effects of the structural model.

Independents variables	Dependent variables				
	EnvS	PIden	PDep	GBhv	SBhv
Exogenous Variables					
Sustainable development knowledge (SDK)					
Direct effect	N.A.	-	-	-	-
Indirect effect	-	N.A.	N.A.	PIden=N.A./PDep=N.A	PIden=N.A./PDep=N.A.
Total effect	N.A.	0.045	0.034	0.028	0.021
Environmental protection knowledge (EPK)					
Direct effect	0.713	-	-	-	-
Indirect effect	-	0.525	0.402	PIden=0.081/PDep=0.251	PIden=0.239/PDep=N.A.
Total effect	0.713	0.525	0.402	0.332	0.243
Endogenous Variables					
Environmental sensitivity (EnvS)					
Direct effect	-	0.736	0.564	-	-
Indirect effect		-	-	PIden=0.114/PDep=0.352	PIden=N.A./PDep=0.335
Total effect		0.736	0.564	0.466	0.340

$p<0.05$
Source: own elaboration.

5 FINAL CONSIDERATIONS

This research was carried out to explain tourist behavior for sustainable tourism destinations. The study investigated the relationship between the environmental knowledge, environmental sensitivity, place attachment and environmental responsible behavior of tourists.

According to the results, the high level of environmental protection knowledge of tourists ensures that they are highly environmentally sensitive. However, the high level of Sustainable development knowledge has no effect on environmental sensitivity.

The other important results are that the environmental sensitivity level of the tourists enables them to have a high level of place identity and place dependence. In addition, the high level of place dependence of tourists increases the general and specific environmentally responsible behavior levels.

Finally, while the high level of place identity of tourists increases the level of general environmentally responsible behavior, it does not affect the level of specific environmentally responsible behavior.

The results of the research indicate that even if the levels of knowledge about sustainable development of tourists are high, there is no change in environmental sensitivity. On the contrary, as levels of environmental protection knowledge increase, environmental sensitivity increases. For this reason, it is important that Uzungöl tourism administration conducts activities that increase the environmental protection knowledge. In addition, it is recommended to provide seminars on protecting the environment for local tour guides and staff working in businesses operating in Uzungöl.

Tourists visiting Uzungöl should be accompanied by local tour guides. This allows tourists to increase their environmental knowledge levels. Because it is supposed that as the environmental knowledge level increases, the environmental sensitivity of the tourists will increase. Cheng & Wu (2015) used this model in the context of sustainable island tourism to explain the network of relationships described above.

According to their results, the higher the knowledge level of the tourists, the higher the environmental sensitivity. However, in this research, environmental knowledge was examined as two sub-dimensions: sustainable development and environmental protection information.

It has been determined that sustainable development knowledge does not affect environmental sensitivity. This may be because of the fact that tourists are very familiar with the concept of sustainability due

to their frequent encounters, but do not know what it actually means.

Therefore, Uzungöl tourism administrators are recommended to first provide training to tour guides, institution staff and local business owners about sustainable development.

In the study, it was found that the environmental sensitivity of tourists provides place attachment. It can be said that Uzungöl tourism administration manages the destination image well. It was found that place identity does not affect specific environmentally responsible behavior.

On the other hand, Chow et al (2019) determined that place identity affects ERB as a result of the data they obtained from Nanling National Forest Park & Dinghu Mountain National Nature Reserve visitors. The reason for this may be that the motivation of the visit of tourists is different. Because tourists visiting nature conservation areas are expected to have a more nature-protective attitude, unlike other destination visitors.

Vaske & Kobrin (2001) who participated in local natural resource work programs found that place identity had a positive effect on ERB. The authors collected data from teens aged 14-17 in the study. The fact that collecting of data from different age groups and local residents (instead of tourists) explains why they achieved different results from the present study.

It is recommended that Uzungöl tourism administration improve experience-based products (Pine & Gilmore, 1999) to enables to increase the place identity level. In this way, tourists can get memories about the destination and these memories can ensure tourists to identify themselves with the destination. (Kement & Çavuşoğlu, 2017).

As the level of place identity of tourists' increases, the general environmentally responsible behavior level also rises. From this point of view, it can be said that place identity and place dependence are among the main reasons why tourists visiting Uzungöl exhibit environmentally responsible behaviors. Tourists visiting Uzungöl are more committed to the destination than others.

Therefore, Uzungöl tourism managers can organize special campaigns and incentive programs for tourists. In this way, the ERB of tourists will rise as well as become loyal customers. It is also important to examine environmental laws in order to develop sustainable tourism in Uzungöl.

Some environmental practices can be created to protect natural and cultural resources. Environmentally protective signs can be placed next to the place and direction signs. All of these are important for making the destination sustainable.

This research is limited to Uzungöl tourism destination. In addition, there is no information about the purpose for which tourists visit the destination. Therefore, it is suggested to be examined according to different types of excursions in future studies. In the present study, the tourists who visited Uzungöl in the spring were examined. It is not known how the tourists behave in different seasons.

Lastly, four variables were used in the study. In the next studies, variables that are likely to reveal different causes such as environmental attitude and environmental concern can be used.

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