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Personal values in relation to environmental attitudes and behavior in handicraft enterprises in Oaxaca and Guanajuato, Mexico

Valores personales en relación con actitudes y comportamientos medioambientales en empresas artesanales de Oaxaca y Guanajuato, México

Diana de Yta-Castillo[1], Patricia S. Sánchez-Medina[2*], René Díaz-Pichardo[3], Angélica Bautista-Cruz[2]

[1]CONAHCYT-Facultad de Ciencias, UMDI Sisal, Universidad Nacional Autónoma de México, ENES-Mérida
[2]Instituto Politécnico Nacional, CIIDIR-IPN Unidad Oaxaca
[3]ICN Business School, CEREFIGE, Université de Lorraine, France

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Abstract

This article explores the role of personal values and environmental attitudes as antecedents of environmental behavior in handicraft enterprises in Oaxaca and Guanajuato, Mexico. Elaborating on the value-belief norm theory (VBN), the theory of reasoned action (TRA), and the theory of planned behavior (TPB), we analyze survey data obtained from 72 handicraft enterprises using structural equation modeling. Our results show that self-transcendent and openness personal values positively and significantly impact the environmental attitudes of handicraft owners/managers as expected according to the (VBN). However, the TRA and the TPB do not explain environmental behavior in these enterprises.

JEL Code: M1, L2, Q5
Keywords: personal values; environmental attitudes; emerging economies; handicraft

*Corresponding author.
E-mail address: psanchez@ipn.mx (P. S. Sánchez-Medina).
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Resumen

Este artículo explora el papel de los valores personales y las actitudes ambientales como antecedentes del comportamiento ambiental en empresas artesanales en Oaxaca y Guanajuato, México. Profundizando en la teoría de valores-creencias-normas (VBN), la teoría de la acción razonada (TRA) y la teoría de la conducta planeada (TPB), analizamos datos de encuestas obtenidos de 72 empresas artesanales utilizando modelado de ecuaciones estructurales. Nuestros resultados muestran que los valores personales de autotrascendencia y apertura impactan de manera positiva y significativa en las actitudes ambientales de los propietarios/gerentes de las empresas artesanales, como se esperaba según la (VBN). Sin embargo, la TRA y la TPB no explican el comportamiento ambiental en estas empresas.

Código JEL: M1, L2, Q5
Palabras clave: valores personales; actitudes ambientales; economías emergentes; empresas artesanales

Introduction

Both individuals and businesses are responsible for behaviors that cause environmental degradation that puts life in danger (Fang et al., 2017; Leonidou et al., 2017). Nevertheless, these behaviors can be managed to become more environmentally friendly (Fransson and Gärling, 1999; Steg et al., 2014) as studies have shown that companies will adopt measures to mitigate environmental damage in response to greater social concern for the natural environment (Sánchez-Medina et al., 2014).

In most countries, Small and Medium Enterprises (SMEs) represent the largest proportion of businesses and contribute the most to generating employment (ONU, 2020). Although the degree to which one single SME impacts the environment cannot be compared with that of a large company, the high number of SMEs makes their environmental impact a significant one (Hillary, 2000). This research studies a particular segment of SMEs in emerging economies: handicraft businesses in Mexico. Previous research has found that the environmental behavior of SMEs in emerging economies is explained by the values, individual norms, and ethics of the owner/manager (Egels-Zandén, 2017; Hamann et al., 2017). Cultural heritage is identified as an important factor in determining environmental behavior in SMEs in such contexts (Corral-Verdugo and Armendáriz; 2000; Schuler et al., 2017). However, we know very little about the mechanisms by which SMEs in these economies engage in environmental behavior, as research on this topic is scarce (Carmeli et al., 2017; Kornilaki et al., 2019; Leonidou et al., 2017).

This article aims to contribute to business ethics literature in general and business sustainability literature in particular by addressing the following research question: are personal values and environmental attitudes relevant antecedents of environmental behavior in handicraft enterprises in Mexico?

With this goal in mind, we use the two main theoretical approaches found in the literature on environmental behavior in businesses: the moral approach and the rational approach. The moral approach considers human behavior as a matter of morality. From this perspective, there are two main psychosocial theories: the Norm Activation Model (NAM) proposed by Schwartz (1977) and the VBN proposed by Stern et al. (1999). The rational approach considers human behavior as a matter of rational choice. Within this approach, there are two main psychosocial theories: the TRA, proposed by Fishbein and Ajzen (1975) and further developed by Ajzen and Fishbein (1980), and the TPB developed by Ajzen (1991). Another important contribution of this article consists of the analysis of handicraft businesses from three theoretical approaches: VBN, TRA, and TPB, linking both the moral and rational approaches. Part of the current debate addresses the convergence between these three theories to explain environmental behavior (Loo et al., 2023; Shang et al., 2023; Valizadeh et al., 2023); however, there are many gaps still to be resolved in SMEs such as these handicraft enterprises.

The rest of the paper is organized as follows: Section 2 presents the theoretical framework of the study and its hypotheses; Section 3 focuses on method, measures, and data treatment; Section 4 presents the results of our analysis as well as a discussion of those results; Section 5 includes the conclusions of the study; and finally, Section 6 discusses the implications of this research.

Theoretical framework and hypotheses development

Value-Belief-Norm Theory (VBN)

The VBN proposes that personal values, which are central elements of personality, influence the formation of environmental attitudes, which are built in a process where a person calculates how their attitude towards a given object affects the people or the things that matter to them most based on personal values (Stern and Dietz, 1994). These environmental attitudes affect the extent to which an individual becomes aware of the consequences of his or her actions for the environment, as well as the level of responsibility he or she accepts for them (Bronfman et al., 2015). Finally, VBN states that personal norms are the ultimate predictor of conservation behavior (Kaiser et al., 2005).

Personal values and environmental attitudes

Values can be the basis for attitude formation and guides for behavior (Karp, 1996; Poortinga et al., 2004). Environmental attitudes are predispositions about the environment that come from the life experience of

each individual (Schaper, 2001). Empirical findings reveal that environmental attitudes are a good predictor of environmental behavior (Mostafa, 2007). Personal values shape environmental attitudes (Stern et al., 1999); an assertion that is verified in several studies (Papagiannakis and Lioukas, 2012). Schwartz (1992, 1994) developed a model which represents ten universal value types. Empirical research shows that these ten value types can be further reduced to four value categories (Schultz et al., 2005): self-transcendent, self-enhancement, openness to change, and conservation. In this investigation, we expect that these different categories of values will affect environmental attitudes differently. In the context of handicraft businesses, values are relevant because these businesses are characterized as having traditionalist values and possessing deep-rooted beliefs (Sánchez-Medina et al., 2014; Sánchez-Medina, 2018).

Self-transcendent values involve an emphasis on the well-being of the natural environment (Dietz et al., 2005; Gifford and Nilsson, 2014) and consequently, it is expected that self-transcendent values would be positively related to environmental attitudes, beliefs, and norms and to act in a pro-environmental way (Schultz and Zelezny, 1999; Steg and de Groot, 2012). This kind of value is very important in the handicraft sector because in this sector there is a close relationship between the artisan and his or her community as each artisan's values are intimately linked to the traditions of the community. Based on the above arguments, we propose the following research hypothesis:

Hypothesis 1a. There is a positive relationship between self-transcendent values and environmental attitudes.

Self-enhancement values refer to the extent to which a person's values, goals, and ideals refer to themselves (success, social power, wealth), and emphasize pursuing self-interest (Schultz and Zelezny, 1999; Schultz et al., 2005). Those who possess them do not feel that environmental problems cause any threat to them directly (Schultz et al., 2005). The manufacture of handicrafts in emerging economies is closely related to indigenous culture, which holds an ideology of profound respect for nature and a prevailing belief in the harmonious relationship between man and nature (Martínez, 2003). Based on these arguments, we propose the following research hypothesis:

Hypothesis 1b. There is no relationship between self-enhancement values and environmental attitudes.

Openness values reflect a desire for and readiness to accept new ideas and new experiences, as well as challenging and uncertain personal outcomes, both physical and intellectual (Schultz and Zelezny, 2003; Schwartz et al., 2000). Choongo et al. (2019) and Schultz et al. (2005) reported the positive influence of openness values on environmental attitudes and environmental behavior. Artisans carry out environmental management actions of their own free will (Sánchez-Medina and Díaz-Pichardo, 2017; Sánchez-Medina, 2018), even if handicraft business management practices are strongly rooted in

traditions (Sánchez-Medina and Díaz-Pichardo, 2017). Based on these arguments, we propose the following research hypothesis:

Hypothesis 1c. There is a positive relationship between openness values and environmental attitudes.

Conservation aims to preserve the status quo and the certainty it provides in close relationships with others, institutions, and traditions (Schwartz, 1992; Schwartz, 1994). Nevertheless, conservation values tend to emphasize the importance of collective goods (Stern et al., 1999), like a clean environment. On the one hand, one could posit that handicraft businesses identify more strongly with conserving the natural environment because they are deeply rooted in the customs and nature-driven beliefs of the traditionalist communities they come from where the ethnic population prevails. On the other hand, being too traditionalist can represent an obstacle to incorporating more environmentally friendly changes in the manufacture of their crafts. These conflicting effects lead us to think that they can cancel each other out and, consequently, we propose the following research hypothesis:

Hypothesis 1d. There is no relationship between conservation values and environmental attitudes.

Theory of Reasoned Action (TRA)

The TRA posits that attitudes, norms, and intentions are antecedents of behaviors. Attitudes, which are a personal factor, and subjective norms, which are a social factor, i.e., pressures exerted by external agents; both determine behavioral intention, and this intention is viewed as the immediate determinant of the corresponding behavior (Fang et al., 2017; Fishbein and Ajzen, 1975). The TRA is useful in explaining the environmental behavior of businesses (Dewhurst and Thomas, 2003; Marshall et al., 2005; Marshall et al., 2010). This study builds on this theory to suggest that personal values influence attitudes, which in turn influence behavior (rather than the intention of behavior). Several authors have found that managers' attitudes have led them to prefer proactive environmental behavior (Cordano et al., 2010; Marshall et al., 2005). Artisans demonstrate awareness of the environmental impacts of their activity probably due to their daily contact with natural resources and their scarcity (Rivera et al., 2008; Sánchez-Medina, 2018). Consequently, we propose the following research hypothesis:

Hypothesis 2. There is a positive relationship between environmental attitudes and environmental behavior.

Theory of Planned Behavior (TPB)

The TPB states that planned behaviors are intentional and thus predicted by intentions toward that particular behavior. According to the TPB, intentions are directly influenced by three antecedents: personal attitudes, perceived behavioral control, and subjective norms. Subjective norms refer to the perceptions of what people think about certain behavior and captures the influence of society on the individual (Ajzen, 1991).

Subjective norms and environmental attitudes

According to Papagiannakis and Lioukas (2012), subjective norms refer to the social pressure exerted by key stakeholders in relation to the environmental behavior of the firm. Various studies based on the TPB found that subjective norms have a positive relationship with environmental attitudes (Al-Swidi et al., 2014; Deng et al., 2016; Kaiser et al., 2005; López-Mosquera and Sánchez, 2012).

Handicraft businesses are under public scrutiny because they have contributed to the exploitation of natural resources and their frequent use of substances with a high lead content represents a danger to public health (Sánchez-Medina et al., 2015; Sánchez-Medina, 2018). Based on these arguments, we propose the following research hypothesis:

Hypothesis 3. There is a positive relationship between subjective norms and environmental attitudes.

Subjective norms and environmental behavior

Environmental pressure from stakeholders is a good predictor of environmental behavior. Cordano et al. (2010) found that industry leaders, local community groups, regulators, and environmental organizations have a positive influence on SME wine enterprises. Public opinion is critical of the activities carried out by the artisanal sector due to its negative environmental impact (Sánchez-Medina et al., 2015; Sánchez-Medina, 2018). Based on the above arguments, we propose the following research hypothesis:

Hypothesis 4. There is a positive relationship between subjective norms and environmental behavior.

According to Loo et al. (2023), environmental behavior is a type of prosocial behavior that cannot be explained from a single theoretical approach. In this article, we propose the study of environmental behavior from three theories: VBN, TRA, and TPB; each one contributes in detail to the

analysis of variables that lead to the explanation of comprehensive environmental behavior. The TRA explains environmental behavior from attitudes however, according to Shang et al. (2023), the TRA fails to explain a specific context; the VBN is more precise in this sense and goes deeper into the study of the attitudes based on values, but the VBN does not analyze the predictors of self-interest that are captured by the TPB as subjective norms (Valizadeh et al., 2023). Based on the above, the following model is proposed, which seeks to explain environmental behavior in craft businesses based on the theoretical foundations of the VBN, TRA, and TPB (Figure 1).

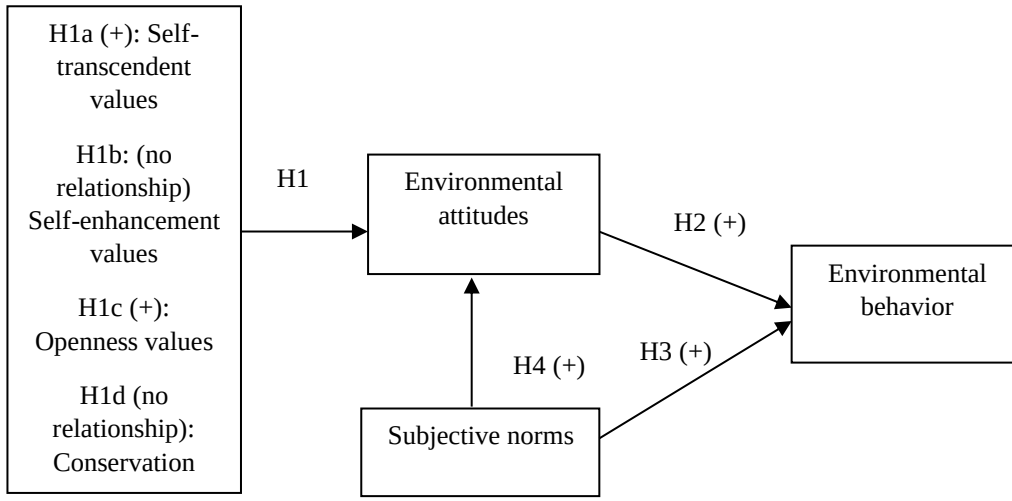

Figure 1. Research model based on the VBN theory, the TRA, and the TPB.
Source: The authors

Method

Research design

This research is a cross-sectional study based on a correlational design in which all the variables in the hypothetical model are measured using Likert-type scales taken from previous research and adapted to

the conditions of the surveyed artisans. We analyze the survey data using factor analysis to assess the validity and reliability of measures. Then, we use a full structural model for hypothesis testing. We perform these statistical analyses using the AMOS software for structural equation modeling.

Sampling and data collection

The sample in this research is composed of 72 surveys, 48 administered in Oaxaca and 24 in Guanajuato, Mexico in 2014. For data collection, we administered a structured questionnaire to handicraft business owners/managers. The questionnaire was composed of 47 items and administered face-to-face in Spanish in the enterprises' facilities.

Measurement of variables

Personal values of owners/managers are defined as the basis for attitude formation and guides for behavior (Karp, 1996; Poortinga et al., 2004) and they were measured using an adapted version of the Portrait Value Questionnaire (PVQ) by Schwartz (1992, 1994) who grouped the 56 original items into ten value categories. These categories were further clustered into four value orientations: self-transcendent, self-enhancement, openness to change, and conservation.

Environmental attitudes of owners/managers are predispositions in relation to the environment that come from the life experience of each individual (Schaper, 2001) and they were measured using items from the NEP Scale (Dunlap et al., 2000). We used the eight-item scale that describes a pro-environmental attitude proposed by Cruz Lasso de la Vega (2004).

Subjective norms refer to the social pressure exerted by key stakeholders about the environmental behavior of the firm (Papagiannakis and Lioukas, 2012) and they were measured based on Henriques and Sardosky (1996, 1999).

Environmental behavior is defined as the behavior that the handicraft business does to reduce its impact on the environment (Dunlap et al., 1983) and it was measured considering the reduction in the use of water and energy according to Wagner and Schaltegger (2004). Table 1 shows the operationalization of the study variables.

Table 1
Operationalization of the study variables.

Variable	Dimension	Indicator	Items	Scale
Personal values	Self-transcendent	Universalism	(ST1) It is important to listen to people, even when you disagree with them. (ST2) I strongly believe that people should take care of nature. (ST3) It is important to take care of the environment. (ST4) I believe that all the peoples of the world "must live in harmony". (ST5) It is important to integrate with nature. (ST6) People should not change nature. (ST7) All people should be treated in the same way (ST8) It is important for you to promote peace among all (ST9) You want justice for everyone, including people you do not know	Likert scale (1 = 'strongly disagree' to 5 = 'strongly agree')
	Self-enhancement	Achievement	(SE1) It is important for you to show your skills. (SE2) It is important for you that people admire what you do. (SE3) It is important for you to be successful.	

			(SE4) Likes to impress other people
	Openness to change	Self-direction	(OP1) I like to be original, think of new ideas, and be creative. (OP2) I like to be free to plan and choose my activities by myself. (OP3) I am curious and want to understand all kinds of things. (OP4) It is important for you to be independent
	Conservation	Tradition	(CO1) I feel satisfied with what I have. (CO2) Religious beliefs are important to me. (CO3) It is important to continue practicing customs and traditions. (CO4) It is important for you to be humble and modest (CO5) You try not to draw attention to yourself
Environmental attitudes		Anti-anthropocentrism	(EA1) Plants and animals have as much right to exist as human beings
		Fragility of nature's balance	(EA3) The balance of nature is very delicate and easily alterable (EA5) When human beings interfere with nature, the consequences are often disastrous

		Possibility of an eco-crisis dimension	(EA2) Humans are abusing the environment (EA4) If things continue as before, we will soon experience a great catastrophe	
		Reality of limits to growth	(EA6) We are approaching the limit of the number of people the Earth can support (EA7) The Earth is like a spaceship, with limited resources and space	
		Rejection of exceptionalism dimension.	(EA8) Despite our special abilities, humans are still subject to the laws of nature	
Subjective norms			How much environmental pressures are exerted by: (SN1) suppliers (SN2) banks and potential investors (SN3) environmental groups (SN4) federal or state government (SN5) federal government (SN6) neighbors and other people from the community (SN7) customers (SN8) media (SN9) competitors	(1 = 'nothing' to 5 = 'much')
Environmental behavior	Reduction in the use of water		(RW1) Reduction of water used to clean tools and workplaces (RW2) Reduction of water used for personal hygiene	how much they have reduced the use of the inputs already mentioned (1 = 'no reduction' to 5 = 'very strong reduction')

	after the end of your workday (RW3) Reduction of water used in the business (RW4) Reduction of water used during the production process (RW5) Reduction of water used in toilets and sinks (RW6) Reduction of water used at home
Reduction in the use of energy	(RE1) Reduction of use of electric energy used in your business (RE2) Reduction of use of electric energy used in your home

Source: Own elaboration based on the literature review

Statistical analysis and discussion of results

An exploratory factor analysis (EFA) with Kaiser Varimax rotation was carried out. Eleven factors were extracted with eigenvalues greater than 1.0. Some items were eliminated in subsequent analyses because of cross-factor loadings, because of their contribution to increased residuals, or because of their contribution to reduced model fit. After this procedure, all factor loadings were greater than 0.5, with Cronbach's alpha values of all constructs greater than 0.8, as recommended by Hair et al., (2010). The value of the Kaiser-Meyer-Olkin (KMO) measurement of sampling adequacy was 0.693, higher than 0.5, which meets the threshold proposed by Kaiser (1974), and Bartlett's test of sphericity resulted in $p = 0.000$, which was less than 0.05, as proposed by Bartlett (1940). Table 2 shows the remaining 27 items. The Appendix presents descriptive statistics graphs of the study variables with the 27 resulting items.

Table 2
Items in the analysis

Construct		Item
Self-transcendent values		
	ST1	It is important to listen to people, even when you disagree with them.
	ST2	I strongly believe that people should take care of nature.
	ST3	It is important to take care of the environment.
	ST4	I believe that all the peoples of the world "must live in harmony".
	ST5	It is important to integrate with nature.
	ST6	People should not change nature.
Self-enhancement values		
	SE1	It is important for you to show your skills.
	SE2	It is important for you that people admire what you do.
	SE3	It is important for you to be successful.
Openness values		
	OP1	I like to be original, think of new ideas, and be creative.
	OP2	I like to be free to plan and choose my activities by myself.
	OP3	I am curious and want to understand all kinds of things.
Conservation values		
	CO1	I feel satisfied with what I have.
	CO2	Religious beliefs are important to me.
	CO3	It is important to continue practicing customs and traditions.
Environmental attitudes		
	EA1	Plants and animals have as much right to exist as human beings.
	EA2	Humans are abusing the environment.
	EA3	The balance of nature is very delicate and easily alterable.
	EA4	If things continue as before, we will soon experience a great catastrophe.
Subjective norms		
	SN1	How much environmental pressure is exerted by suppliers?
	SN2	How much environmental pressure is exerted by banks and potential investors?
	SN3	How much environmental pressure is exerted by environmentalist groups?
Reduction of water		
	RW1	Reduction of water used to clean tools and workplaces.
	RW2	Reduction of water used for personal hygiene after the end of your workday.
	RW3	Reduction of water used in the business.
Reduction of energy		
	RE1	Reduction of use of electric energy used in your business.
	RE2	Reduction of use of electric energy used in your home.

Notes: The table shows the remaining items in the analysis after an exploratory factor analysis (EFA) with Kaiser Varimax rotation was carried out. The EFA was held to inspect the data structure. The original items were in Spanish.
Source: The authors.

The hypothetical model of this investigation was tested using structural equation modeling in AMOS 24, with the maximum likelihood estimation method. Following the two-step approach suggested by Anderson and Gerbing (1988), the measurement model was evaluated first, followed by an examination of the structural model. We performed confirmatory factor analysis (CFA) to establish construct validity

at the measurement model stage. After verifying convergent and discriminant validity, the structural model was examined to assess the fit of the model to the data and test the hypotheses.

The measurement model results

Validity and reliability

Validity is related to the degree of confidence to which we have measured the intended concept by the selected indicators. Statistically speaking, validity can be assessed through factor analysis. Reliability is related to the internal consistency of the data structure and can be assessed through Cronbach's alpha coefficient and composite reliability coefficients.

According to Table 3, all values of standardized factor loadings exceed 0.50, which concurs with the threshold proposed by Hair et al. (2010). Additionally, Cronbach's alpha values ranged from 0.793 to 0.919, higher than 0.70, which falls within the threshold recommended by Nunnally and Bernstein (1994). Composite reliability (CR) coefficients of all latent constructs ranged from 0.803 to 0.920 which were well above the acceptable level of 0.70 (Hair et al., 2010). The average variance extracted (AVE) values ranged from 0.600 to 0.742, exceeding the acceptable threshold level of 0.50 proposed by Hair et al. (2010). Based on this evidence, it can be concluded that the measurement model has an adequate level of convergent validity.

Table 3
Confirmatory factor analysis results

Constructs		Items	Internal reliability Cronbach α	Factor loadings	Convergent validity	
Second-order constructs	First-order constructs				CR	AVE
	Self-transcendent values	(ST1) (ST2) (ST3) (ST4) (ST5) (ST6)	0.89	0.71 0.80 0.79 0.81 0.85 0.69	0.90	0.60
	Self-enhancement Values	(SE1) (SE2) (SE3	0.89	0.89 0.91 0.77	0.89	0.74
	Openness values	(OP1) (OP2) (OP3)	0.84	0.90 0.62 0.90	0.86	0.67
	Conservation values	(CO1) (CO2)	0.79	0.57 0.74	0.81	0.60

		(CO3)		0.97		
	Environmental attitudes	(EA1)	0.92	0.83	0.92	0.74
		(EA2)		0.95		
		(EA3)		0.82		
		(EA4)		0.83		
	Subjective norms	(SN1)	0.87	0.77	0.87	0.69
		(SN2)		0.85		
		(SN3)		0.87		
Environmental behavior	Reduction of water use	(RW1)	0.87	0.69	0.80	0.68
		(RW2)		0.93		
		(RW3)		0.92		
	Reduction of energy use	(RE1)		0.92		
		(RE2)		0.83		

Notes: The table shows the confirmatory factor analysis results (CFA). We performed CFA to establish construct validity at the measurement model stage. After verifying convergent and discriminant validity, the structural model was examined to assess the fit of the model to the data and test the hypotheses.
Source: The authors.

Following the criterion suggested by Fornell and Larcker (1981), discriminant validity was assessed by comparing the square root of AVE with the correlations between constructs. In Table 4 we can observe that all other values fall below this limit; it can thus be concluded that the measurement model has an adequate level of discriminant validity.

Table 4
Evidence of discriminant validity and descriptive statistics

Constructs	1	2	3	4	5	6	7	Media	SD
1.Self-transcendent values	0.77							2.54	1.06
2.Self-enhancement values	-0.05	0.86						4.16	0.87
3.Openness values	0.38	-0.13	0.82					4.31	0.81
4.Conservation values	0.29	-0.12	0.52	0.78				4.17	0.96
5.Environmental attitudes	0.57	-0.10	0.37	0.15	0.86			4.22	0.88
6.Subjective norms	-0.28	0.10	-0.16	0.00	-0.34	0.83		2.34	1.23
7. Environmental behavior	0.22	0.25	-0.12	-0.04	0.24	-0.32	0.82	2.54	1.06

Notes: The table shows diagonal values, which represent the square root of the average variance extracted. The off-diagonal values represent the correlations among the latent constructs. The table also shows the means and standard deviation of each of the constructs.
Source: The authors.

Goodness of fit indicators

We obtained the following fit indicators: $\chi 2$= 510.662, GFI = 0.710, RMR = 0.187, CFI = 0.855, NFI = 0.697, AGFI = 0.633, $\chi 2/df$= 1.591, PNFI = 0.592, PGFI = 0.561, RMSEA = 0.091. Here, the p-value of the chi-square is significant (p = 0.000 and $\chi 2/df$= 1.591 is lesser than 3.0) and the RMSEA value is greater than the recommended 0.08. According to this criterion, the model achieved a good fit. Additionally, according to Malkanthie (2015), one method of determining parsimonious fit is by using the Parsimony Goodness of Fit Index (PGFI) and the Parsimonious Normed Fit Index (PNFI). In our model, PNFI = 0.592, which is greater than 0.50 (level of acceptance) and PGFI = 0.561, which is greater than 0.50 (level of acceptance). According to Awang (2014), there is no agreement among researchers on which fit indexes to use. In this study, we used parsimonious fit.

Structural model results and discussion

The next step was to test the hypotheses by running a structural model. The model yields the following fit indicators: $\chi 2/df$= 1.688; PNFI = 0.610 and PGFI = 0.577; and p = 0.000. From this, we can see that the structural model achieved a parsimonious fit. Table 5 shows the standardized coefficients, the corresponding two-tail p values, and decisions in terms of hypothesis testing.

Table 5
Hypothesis testing

Hypothesis	Hypothesized direct effect	Path coefficient	p -value	Decision
H1a	There is a positive relationship between self-transcendent values and environmental attitudes.	0.487	<0.001	Accepted
H1b	There is no relationship between self-enhancement values and environmental attitudes.	-0.050	0.649	Accepted
H1c	There is a positive relationship between openness values and environmental attitudes.	0.214	0.055	Accepted
H1d	There is no relationship between conservation values and environmental attitudes.	-0.080	0.505	Accepted
H2	There is a positive relationship between environmental attitudes and environmental behavior.	0.174	0.242	Rejected
H3	There is a positive relationship between subjective norms and environmental attitudes.	-0.201	0.077	Rejected

H4	There is a positive relationship between subjective norms and environmental behavior.	-0.281	0.093	Rejected

Notes: Path coefficients and p-values obtained from structural equation modeling with the corresponding decisions on each hypothesis.
Source: The authors.

Figure 2 shows the path model with standardized coefficients, it is observed that the effect of self-transcendent values on environmental attitudes is positive and significant ($\beta = 0.487$, $p < 0.001$). Therefore, hypothesis 1a is accepted. These results coincide with those of Papagiannakis and Lioukas (2012) and Schultz and Zelezny (1999), who found a positive and significant relationship between self-transcendent values and environmental attitudes.

Self-transcendent values identify with the higher-level Maslowian needs. They are related to the concern for others' welfare and for the society at large and signify the transcendence of selfish interests, so are predicted to be positively related to attitudes toward protection of the environment (Nilsson et al., 2004; Nordlund and Garvill, 2003; Stern et al., 1995).

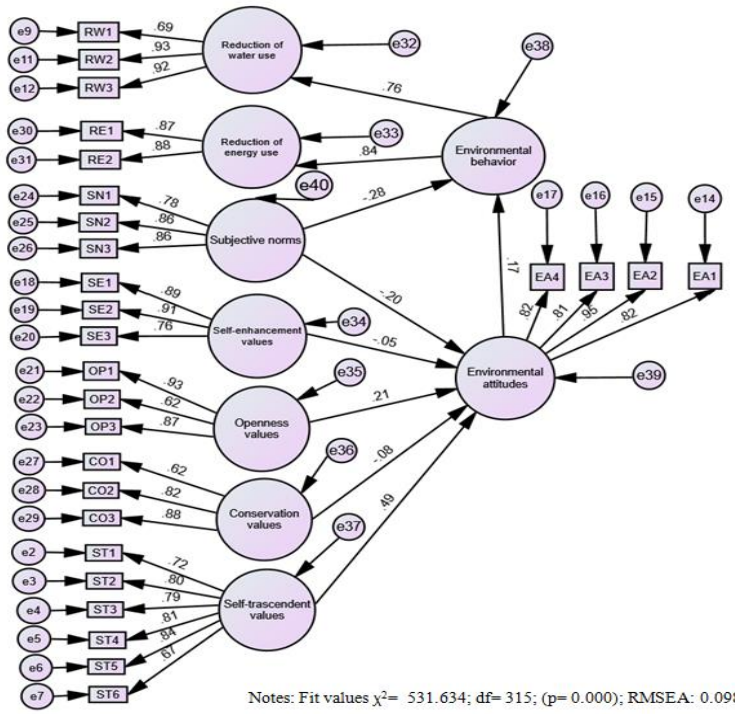

Figure 2. Structural model with path coefficients (β).
Source: The authors

Corral-Verdugo and Armendáriz (2000) have indicated that the Mexican worldview on nature and society is syncretic because Mexican culture is the product of a fusion of two cultures: Hispanic (European), which has a utilitarian view and Indian (Native American), which has pro-environmental beliefs of an indigenous base. According to these authors, the indigenous base tends to believe in a deep connection between human beings and nature. In the indigenous worldview, there is an ideology of profound respect for the capacities of nature and a prevailing view of the harmonious relationship between man and nature (Martínez, 2003). In Mexico, the production of handicrafts is closely linked to the culture of the original indigenous peoples. Instead, in Western and industrialized countries humans are seen as separate from nature, and even consider humans to be superior to nature (Bechtel et al., 1999; Kearins et al., 2010).

For these reasons, it is possible that the self-transcendent values of those we surveyed have positively influenced their environmental attitudes.

In this research, it was found that the effect of self-enhancement values on environmental attitudes is negative and not significant ($\beta = -0.050$, $p = 0.649$). Therefore, hypothesis 1b is accepted. These results contrast with those of Papagiannakis and Lioukas (2012), who found a negative and significant relationship between self-enhancement values and environmental attitudes.

Self-enhancement values serve individual interests (Nordlund and Garvill, 2003), therefore it was expected that people with these values would be unwilling to sacrifice their immediate personal interests in favor of those of the long-term collective and so environmental issues would not be a priority for them (Fukukawa et al., 2007; Stern et al., 1993). In the sample of artisans, self-enhancement values did not significantly impact environmental attitudes, perhaps because they do not perceive the achievement of personal objectives and care for the natural environment to necessarily be in conflict (Liobikienė and Juknys, 2015; Steg et al., 2014). Due to the syncretic vision regarding the relationship between nature and society (Corral-Verdugo and Armendáriz, 2000), Mexican artisans can possess anthropocentric and ecocentric values at the same time and not find contradiction in it. Therefore, for them, self-enhancement values and environmental attitudes may not be mutually exclusive. In this order of ideas, Milfont and Duckitt (2004) pointed out that a balance between utilization and preservation of the natural environment is possible. In this manner, the fact that humans use natural resources for human wellbeing is not in conflict with the need to protect the environment at the same time.

This was also found in participants from Brazil, Malaysia, and Zimbabwe, as well as in other samples of Mexicans who could all be classified as non-Western and non-industrialized societies (Bechtel et al., 1999; Corral-Verdugo and Armendáriz, 2000; Lau et al., 2016).

In this research, it was found that the effect of openness values on environmental attitudes is positive and significant ($\beta = 0.214$, $p = 0.055$). Therefore, hypothesis 1c is accepted. This result is in

accordance with that of Schultz et al. (2005), who found that openness values can be positively related to environmental attitudes, and with Choongo et al. (2018), who found a significant positive effect of openness values on environmentally oriented corporate social responsibility in SME's in Zambia. In contrast, this result differs from that of Poortinga et al. (2004), who found that individuals who support openness values more strongly make greater use of energy for transport purposes. This also differs from Stern et al. (1998), who found that openness to change was not associated with any behavioral indicator.

Openness values express people's readiness to accept and pursue novelty and challenge the status quo. It can be argued that openness values positively influence the environmental attitudes of the artisans in the sample because they show openness to modify the current state of affairs regarding the environment.

In this research, it was found that the effect of conservation values on environmental attitudes is negative and not significant ($\beta = -0.076$, $p = 0.505$). Therefore, hypothesis 1d is accepted. This result contrasts with those of Schultz et al. (2005) and Schultz and Selezny (1999), who suggested that these variables are negatively and significantly related.

Conservation values identify with the lower levels of Maslow's hierarchy and a materialist or prematerialist worldview in terms of Inglehart's thesis (Stern et al., 1995). People with a materialist or prematerialist worldview would be less concerned about having better behavior in relation to the environment (Dietz et al., 2005; Inglehart, 1995; Tindall et al., 2003). In fact, according to Hodgkinson and Innes (2000), ecological problems stem primarily from traditional values because they emphasize economic well-being and physical security above all (Inglehart, 1995; Stern et al., 1999). According to Stern (2000), traditional values are negatively associated with pro-environmental actions.

However, it is possible that some conservationist social movements, including the environmental movement, make use of traditional values such as duty in order to activate feelings of personal obligation to support the achievement of collective goods (Stern et al., 1999). In this way, Boer and Fischer (2013) point out that prosociality can be performed by people with traditional values and Menzel and Bögeholz (2010) found that traditional values were a good predictor of non-activist environmental behavior.

In the handicraft businesses, artisans are characterized as having traditionalist values (Sánchez-Medina et al., 2014; Sánchez-Medina, 2018) and are unlikely to do something different from what is socially established (Sánchez-Medina et al., 2010). However, it seems that being overtly traditionalist makes no difference in the environmental attitudes of artisans, perhaps because their traditions strongly involve the harmony of man and nature, as stated above. It is known that one quality of the indigenous people of Mexico is the desire to preserve their traditions for the transition from generation to generation.

For these reasons, it is possible that conservative values have a negative influence on environmental attitudes.

This research found that the effect of environmental attitudes on environmental behavior is positive and not significant ($\beta = 0.174$, $p = 0.242$). Therefore, hypothesis 2 is rejected. Our results coincide with those of Marshall et al. (2010), who found that environmental attitudes are not significant predictors of the adoption of environmental practices in the wine industry of the United States and New Zealand. Artisans have positive attitudes towards the environment and develop different environmental strategies, but in this case, it seems that the fact that artisans are sensitive to environmental problems does not significantly impact their environmental behavior.

It seems that there is no connection between environmental attitudes and environmental actions. This circumstance is reported in the academic literature as the attitude action gap between environmental attitudes and environmental behavior, which is the gap that can occur when the values or attitudes of an individual do not correlate to his or her actions (Rhead et al., 2015; Tilley, 1999).

Although the environmental attitudes of SMEs are positive, they do not translate into environmental actions (Lewis et al., 2015). This gap can be explained by the restrictions and barriers SMEs face (Chassé and Courrent, 2018; Revell et al., 2010; Tilley, 1999).

Handicraft businesses are a sector that mainly operates at the bottom of the pyramid, which means that businesses face poverty very closely (Prahalad, 2005; Sánchez-Medina, 2018). Due to this condition, artisans could be forced to ignore or abandon the green imperative (Cassells and Lewis, 2011) or may be prevented from getting involved in more sustainable practices (Chi Vo, 2011; Gadenne et al., 2009). Then, it could be that although artisans have favorable attitudes towards the environment, the economic factor plays an important role in inhibiting the development of more environmental actions within their businesses.

Along these lines, Kollmuss and Agyeman (2002) pointed out that many pro-environmental behaviors can only take place if the necessary infrastructure and knowledge is provided. For example, some artisans may have pro-environmental attitudes but lack awareness of the dangers of using toxic inputs and the impact of an irrational use of natural resources in the production of their handicraft (Sánchez-Medina et al., 2011).

This research found that the effect of subjective norms on environmental attitudes is negative and not significant ($\beta = -0.201$ $p = 0.077$). However, it is significant for $p = 0.077$ which is not negligible. Therefore, hypothesis 3 is rejected. This result is not consistent with those of Tarkiainen and Sundqvist (2005), López-Mosquera and Sánchez (2012), and Al-Swidi et al. (2014), who found that subjective norms are positively related to environmental attitudes.

The explanation for this result may lie in the fact that handicraft businesses are directed by the owner and are governed based on their own value system and therefore their attitudes are not based on what stakeholders expect from them (Cambra-Fierro et al., 2008).

In fact, apparently, subjective norms make the artisan reduce his or her environmental attitudes. Although individuals interact in society and therefore receive messages that can influence their environmental attitudes, at the end of the day, the definitive decision is made by the individual (Choi et al., 2015). Also, for Bamberg and Möser (2007) social norms do not necessarily represent a social pressure and people basically use them as information about what behavior is considered appropriate in society.

Likewise, in the handicraft sector, beliefs and expectations are deeply rooted in traditions and based on past experience and are therefore difficult to change (Sánchez-Medina and Díaz-Pichardo, 2017).

Furthermore, environmental regulation in this sector is far from being demanding, so in this context, handicraft businesses face little pressure from many stakeholders to have a greater commitment to the environment than that which is required by environmental regulation (Cassells and Lewis, 2009). Also, as they are scattered, it is difficult for them to be visible to the public eye. Therefore, it seems possible that when owners/managers feel pressure from stakeholders, they do not accept it and thus develop fewer environmental initiatives.

This research found that the effect of subjective norms on environmental behavior is negative and not significant ($\beta = -0.281$, $p = 0.093$). Again, the significance of this relationship is non-negligible. Therefore, hypothesis 4 is rejected. This result opposes that of Cordano et al. (2010) and Marshall et al. (2005) for whom the environmental pressure exerted by external stakeholders positively impacts the environmental management of winery businesses. This result is sustained in a certain sense in the result that subjective norms have a negative relationship with environmental attitudes (result of hypothesis 3). That is, if subjective norms negatively influence the environmental attitudes of artisans, it is logical to think that they influence their environmental behavior in the same sense. This is in line with Hosta and Zabkar (2021), who found that social norms only had a slight tendency to impact the availability to behave in a socially responsible manner.

Perhaps artisans are not willing to accept environmental pressures from suppliers, banks, possible investors, and environmental groups because in the handicraft sector, the business is managed based on traditions and past experience and it is difficult for these processes to change (Sánchez-Medina and Díaz-Pichardo, 2017).

Although handicraft businesses are under the public eye, the truth is that, in artisanal business studies, it was not until 2008 that the use of toxic inputs and exploitation of natural resources in handicraft manufacturing was brought to light (Sánchez-Medina and Díaz-Pichardo, 2017). Therefore, it is feasible

to think that handicraft businesses perceive environmental pressure from stakeholders in an unfavorable way.

In addition, artisans make products that cannot compete in terms of price or quantity but solely in terms of quality (Sánchez-Medina and Díaz-Pichardo, 2017). These businesses serve a market segment where consumers are looking for unique and original products and will not easily accept a standardized version of the product (Hernández et al., 2004). Therefore, it could be thought that artisans are focused mostly on satisfying these needs and not on meeting the green demands of stakeholders.

Conclusions

This research combines the moral approach and the rational approach to address the research question: are personal values and environmental attitudes relevant antecedents of environmental behavior in handicraft enterprises in Mexico? Our results allow us to make several interesting remarks.

First, this research addresses a relevant topic in the literature about environmental behavior in handicraft enterprises in view of the necessity for more studies in this sector especially in emerging countries.

Second, this research studies the environmental behavior of Mexican handicraft enterprises from a psycho-social perspective, given that handicraft businesses are businesses in which the owner/manager has the power to carry out certain environmental behavior and whose values, beliefs and general socio-cultural issues significantly shape their business decision making.

Third, the results show that personal values play a significant role in the development of environmental attitudes in handicraft businesses, as proposed by the VBN; particularly, self-transcendent and openness values positively impact environmental attitudes. These findings are explained by the fact that in the indigenous worldview the natural environment is seen as a central element and nature is given a special symbolism. It seems that the self-transcendent values of handicraft business owners/managers positively influence their environmental attitudes. Also, their openness values positively influence their environmental attitudes because they show openness to modifying specific aspects of production such as substituting toxic substances with more eco-friendly ones. In contrast, self-enhancement and conservation values do not significantly influence the formation of environmental attitudes in artisans. This finding is explained by the fact that artisans do not see their personal interests in conflict with nature as they see both themselves and nature as one and the same.

Although our sample is composed of handicraft enterprises operating in Oaxaca and Guanajuato, and they are not necessarily representative of the sector at the country level, our results can be applicable to other regions with similar characteristics, not only in Mexico, but also in other emerging countries.

In further exploring the mechanisms by which handicraft businesses in Mexico adopt environmental behavior; this study shows evidence of the non-negligible negative effects of subjective norms on environmental behavior as proposed by the TRA and on environmental attitudes as proposed by the TPB ($p < 0.1$). The findings show the importance of the context in which these businesses are immersed in conditioning their environmental behavior. Artisans show positive attitudes towards the natural environment and because of that have already managed to overcome the most important barrier in environmental issues, the attitudinal barrier. Nevertheless, the results also show that handicraft businesses do not operate in isolation and need support in order to be sustainable. This is an economic sector that operates in the Mexican base of the pyramid, which often has to think about surviving economically and most likely finds it more challenging and complex to improve its environmental behavior. Therefore, a more complete model is required that considers the social context in which the psychosocial processes of the individual occur (Oreg and Katz-Gerro, 2006).

Finally, this study contributes to the analysis of psycho-social constructs like values and attitudes of owners/managers which can lead to better environmental behavior of handicraft businesses in a developing economy. In these contexts, it is necessary to conduct more research on environmental issues, especially due to the fact that these countries contribute progressively to environmental degradation.

The theoretical implications of this research are related to the combination of two perspectives that are traditionally seen as being in competition: the moral perspective (with the VBN theory) and the rational perspective (with the TRA) to explore the mechanisms by which small handicraft businesses adopt environmental behavior.

In terms of practical implications, this research could inspire the creation of a public policy that stimulates the environmental behavior of handicraft businesses by facilitating access to financial resources, support networks, and technical assistance, all of which are necessary to pursue environmental strategies. This public policy could also promote awareness in consumers and other stakeholders so they appreciate and support the environmental behavior of handicraft enterprises in emerging economies.

For handicraft businesses owners/managers, the implications of this research are related to the fact that their personal values, particularly self-transcendent and openness personal values positively impact their environmentally friendly attitudes, which can contribute to preserving the health and future of their children and their communities. Consequently, it is important for them to adopt and promote these types of values in the current and future generations of artisans.

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Annex

Descriptive statistics graphs of the study variables with the 27 resulting items.

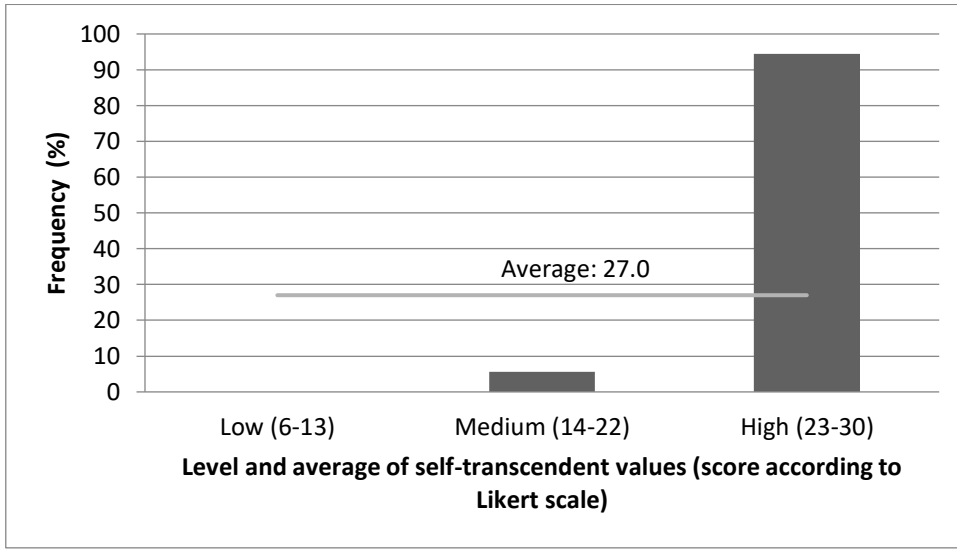

Figure A1. Level and average of self-transcendent values
Source: The authors.

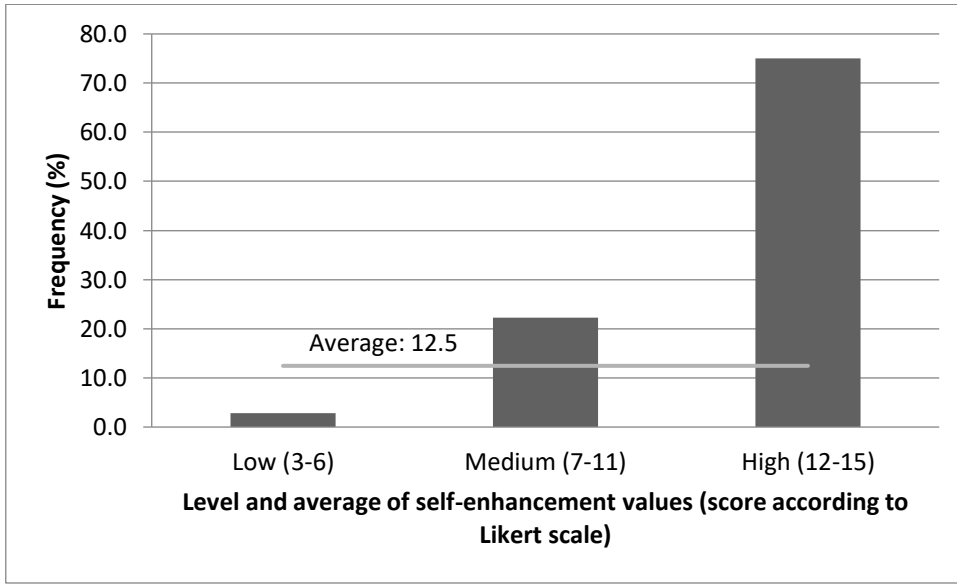

Figure A2. Level and average of self-enhancement values
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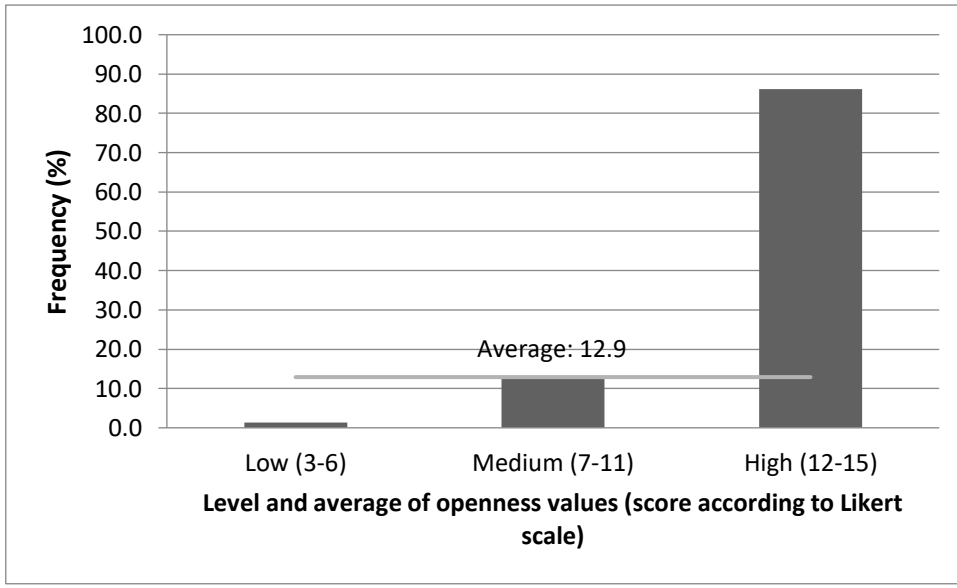

Figure A3. Level and average of openness values
Source: The authors.

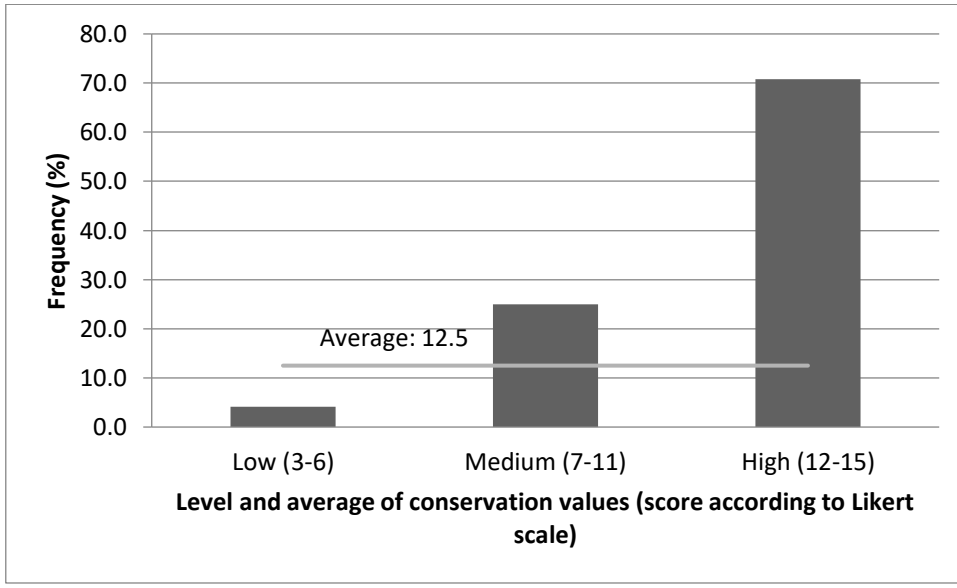

Figure A4. Level and average of conservation values
Source: The authors.

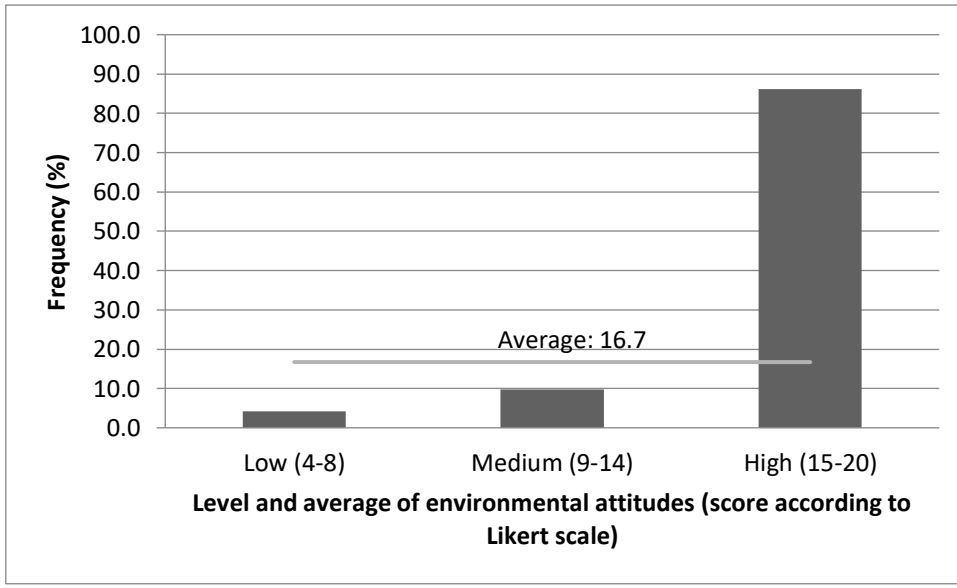

Figure A5. Level and average of environmental attitudes
Source: The authors.

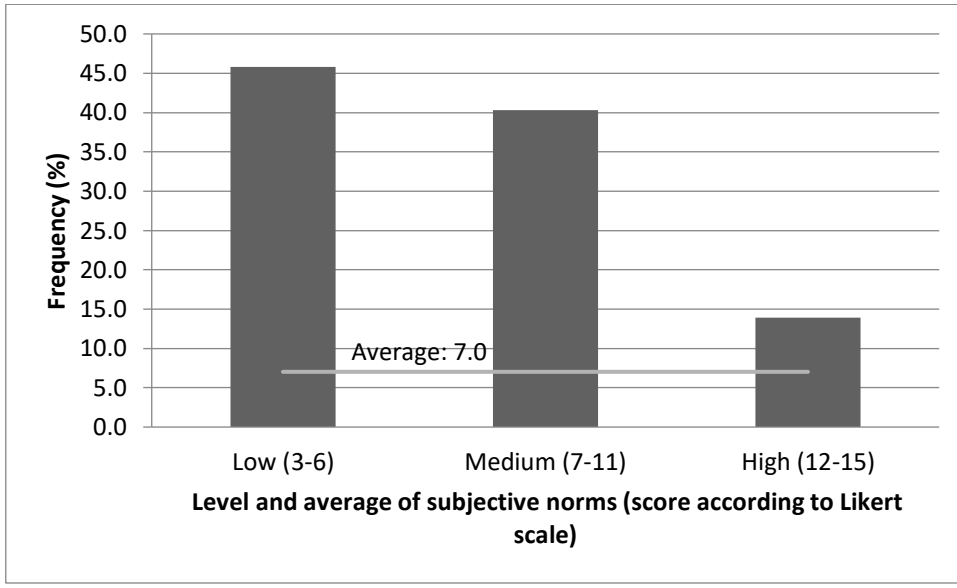

Figure A6. Level and average of subjective norms
Source: The authors.

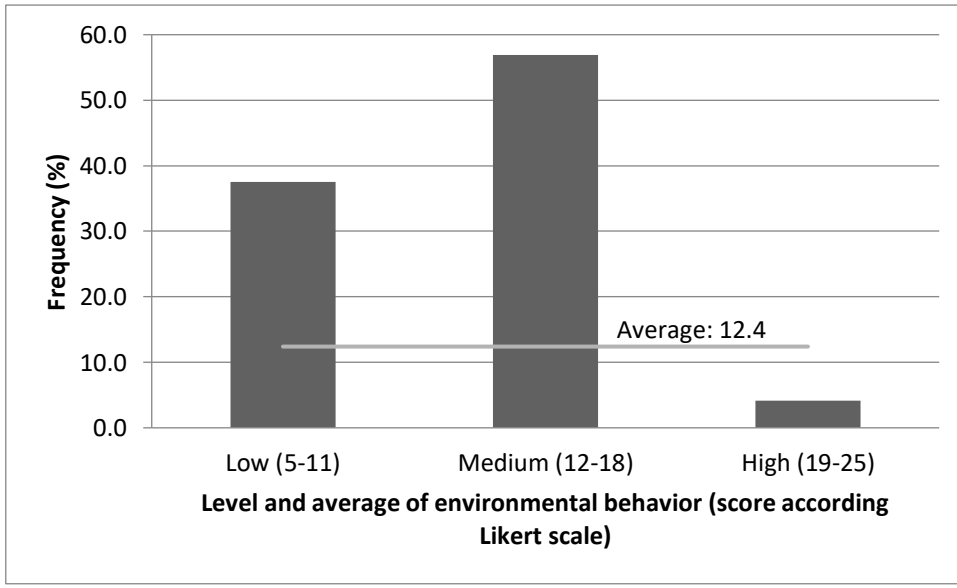

Figure A7. Level and average of environmental behavior
Source: The authors.