Exploring Global Environmental Engagement: The Role of Willingness and Membership in Environmental Action

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Abstract: This study explores the role of willingness and membership in global environmental engagement, focusing on how these factors influence environmental action across diverse global populations. Using a combination of latent class analysis and logistic regression models, we examine the impact of the willingness to contribute financially, environmental membership, and trust in people, alongside demographic variables such as gender, age, and education level. Our findings highlight the significant role of environmental membership and the willingness to act in shaping behaviours, with gender and trust further influencing engagement patterns. This promotes the UN's sustainable goals, primarily Climate Action. These insights contribute to understanding the drivers of environmental activism globally.

Keywords: climate action; environmental membership; environmental action; global environmental engagement; good health and well-being; responsible consumption and production; sustainable cities and companies

1. Introduction

Our research used World Values Survey (WVS) (see also Appendix B, in which we summarise the description of the WVS based on information we obtained from the WVS) data to focus on global environmental engagement. Previous studies using WVS data are focused on value orientation [1], cultural dimensions and comparisons [2–4], determinants of well-being [5], political culture [6,7], income aspirations and happiness [8], global variations in health [9], and a trustful society and the individual and health [10]. The unnoticed literature on people's perceptions relevant to environmental engagement, action, and willingness, including social and demographic characteristics, is the gap, and we attempt to explore it using WVS data.

It seems vital to understand the interplay between individuals' willingness and actions in environmental group membership [11,12]. The WVS provides extensive cross-national data on social, political, and environmental attitudes, making it a key resource for exploring such dynamics [6,13,14]. Previous studies have utilised WVS data to investigate global shifts in values and cultural trends [1,5,14]. However, public attitudes toward climate action are unnoticed exclusively in the literature. By integrating environmental membership, willingness to contribute income, values, beliefs, and gender considerations toward environmental action, our study bridges this gap, contributing nuanced insights into the global psychological and social mechanisms driving environmental activism.

Global environmental engagement has garnered increasing attention due to the pressing need for sustainable practices and collective action to address environmental challenges. Previous studies show that urban people voluntarily participate in environmental campaigns [15], and that involvement in environmental organisations exclusively and obtaining outdoor experiences are more crucial to environmental commitment [16]. People are even willing to pay on behalf of environmental protection, such as by reducing air pollution [17], green innovation [18], and green credit for sustainability [19]. The research underscores the significant role of individual and collective behaviours in promoting environmental sustainability. Membership in environmental organisations has been highlighted as a catalyst for active participation in environmental protection efforts, with active members often displaying higher engagement levels than inactive ones [20]. Additionally, willingness to contribute financially toward environmental protection reflects a critical measure of personal commitment to and prioritisation of environmental issues [20].

Previous studies have explored the influence of value orientations and social trust on environmental actions, finding that postmaterialist values often correlate with a heightened sense of environmental responsibility. For instance, Chawla [16] attempts to explain people's motivation towards protecting the environment. Trust in societal institutions and individuals also emerges as a facilitator of collective action, enabling cooperation in environmental initiatives [20]. Despite these insights, there remains a research gap in understanding the interplay between the willingness to act, membership types (active vs. inactive), and value-based drivers in predicting environmental engagement globally.

We extend the existing studies on environmental engagement and willingness and action in environmental group membership [21–24] and examine the effect of willingness and membership, trust in people, and belief in God on environmental action. Thus, we empirically tested the following research questions: (1) Does environmental membership lead people to environmental action? (2) Does the willingness to contribute income to environmental protection lead to environmental action? (3) Does trust in people lead to environmental action? We used the World Value Survey (WVS) database from 1995 to 1999 for all countries. Recent research emphasises the significance of understanding individual-level environmental engagement and action in shaping sustainable policies and practices [25–27]. While newer datasets exist, the issue of individual-level detail in environmental actions is justified by World Values Survey (WVS) data from 1995 to 1999. Within the concurrent research setting, we claim that this dataset remains one of the most comprehensive sources for examining micro-level patterns in environmental behaviour [28–30]. Our empirical analysis shows that individuals with active membership in environmental organisations exhibit higher environmental action levels, particularly in adopting sustainable practices like recycling, reducing water consumption, and attending environmental meetings. While Coelho et al. [31]'s study reveals that the influence of positive pro-environmental behaviour influences environmental concern, our study strongly reveals the significance of active membership in environmental engagement.

Furthermore, willingness to contribute financially to environmental causes significantly influences environmental behaviours. While testing the effect of people's willingness to contribute financially, i.e., their contribution as a part of their income to environmental protection, our results show that people ignore contributing financially to environmental actions. In line with these results, a prominent study shows that social movements entirely depend on people's commitment [32]. Oreg and Katz-Gerro [33] also mention that the perceived behaviour of individuals affects their willingness to sacrifice. However, individuals with postmaterialist values are significantly more likely to engage in environmental actions. Similarly, trust in people also has a positive impact on environmental actions. However, belief in God does not have a statistically significant effect on environmental

actions. Additional findings of our study show that gender differences also emerge, as women's engagement with environmental membership is more pronounced in environmental actions than that of males (membership). Trust in people and belief in environmental causes further amplify the likelihood of participating in environmental actions. Educational and income levels also contribute to differences in engagement, with higher education and income levels correlating with greater environmental involvement.

This research contributes to the growing body of literature [34–37] by highlighting the combined influence of individual factors, such as environmental membership, willingness to contribute financially, and demographic characteristics, on global environmental engagement. By focusing on these drivers, this study provides a more nuanced understanding of the complexities behind pro-environmental behaviour, offering practical implications for policymakers, environmental organisations, and activists. The findings emphasise the importance of fostering membership in environmental organisations and increasing awareness around financial contributions to sustain long-term global environmental efforts [38].

Our study also contributes to the existing environmental literature by employing a comprehensive dataset and additional models such as the generalised ordered logit model (GLM), ordinal probit regression (OPROBIT), and multilevel ordinal logistic regression, along with the marginal effect showing the impact of ENVT_MEM, WILLINESS_ENVTPROT, VALUE_ORIENTATION, and TRUST_PEOPLE on ENVT_ACTION. By focusing on active and inactive memberships, financial willingness, and value orientations, our findings provide nuanced insights into the dynamics of environmental engagement. This study's novelty lies in its global perspective, bridging the existing gaps and offering actionable insights for policymakers and environmental organisations to foster higher participation in sustainability initiatives.

Finally, the key contribution of our paper is its exploration of the drivers of environmental activism and their alignment with multiple United Nations Sustainable Development Goals (SDGs). By emphasising the importance of financial willingness, environmental membership, and trust, this study advances Climate Action, Good Health and Well-being, Responsible Consumption and Production, and Sustainable Cities and Communities. Our findings highlight the need for collective action for global environmental challenges. We underscore the vital role of environmental membership in driving meaningful environmental action. By examining how environmental participation translates into concrete environmental actions, this study contributes to broader sustainability efforts, aligning with global initiatives such as the United Nations Sustainable Development Goals (SDGs), particularly Goal 13 (Climate Action) and Goal 17 (Partnerships for the Goals). These insights highlight pathways to foster global environmental responsibility, encourage healthier and more sustainable practices, and promote collaboration and inclusivity, contributing to a more equitable and sustainable future.

The following sections explain the relevant literature and methodology, followed by the results. We conclude the paper by stating the limitations and prospects.

2. Literature Review and Hypothesis Development

We consider the personal, social, and psychological variables (values and beliefs) with environmental measures (environmental action) and propose the econometric model to test the effect of personal environmental membership, willingness to pay for the environment, and beliefs regarding environmental action. Following Sánchez-García, Zouaghi, Lera-López, and Faulin [17], our baseline theories are (1) the theory of planned behaviour (TPB) and (2) the value–belief–norm (VBN) theory, which explain individual willingness, engagement, and membership in environmental actions. Theoretically, the TPB connects explaining how active environmental membership enhances pro-environmental actions by

influencing individuals' minds and perceived behavioural control [39]. More explicitly, environmental membership strengthens these factors by exposing individuals to sustainability norms and resources to engage in environmental actions [12,40]. Similarly, the VBN theory suggests that individuals with strong belief norms develop a sense of moral obligation to act pro-environmentally when they recognise environmental issues and feel a personal responsibility to address them [32]. Active membership further motivates members to adopt sustainable behaviour [41].

Within the baseline of the TPB, people's active membership in environmental organisations often drives more robust environmental behaviours due to the role of these groups in fostering awareness and encouraging collective action [42,43]. Environmental membership is thought to be very relevant in predicting public intentions for a variety of pro-environmental actions [44], and it emphasises the important part of people's everyday lives concerning the environment to act as a catalyst for change [45,46]. Environmentally responsible people have active or inactive responses towards environmental programs [47]. Previous studies highlight that active members engage more frequently in behaviours such as recycling, reducing energy consumption, and participating in advocacy efforts compared to non-members or inactive members [48–50]. Active involvement provides platforms for individuals to translate environmental concerns into tangible actions, creating a supportive network for sustained engagement [20]. Based on the above discussion, we propose the following hypothesis:

H1. *Active membership in environmental organisations (ENVT_MEM_ACTIVE) positively predicts environmental actions.*

Manzo and Weinstein's earlier study [51] shows that behavioural commitment is an important factor to environmental commitment. However, people's experiences of natural life, organisations, education, and any negative influence determine their behaviour towards environmental commitment [16]. Overall, the theory of planned behaviour has been used to study people's intentions towards environmental activism [52]. Financial willingness is often considered a proxy for commitment to environmental sustainability. Schultz and Zelezny [53] find that individuals expressing willingness to contribute financially are likely motivated by intrinsic values, such as environmental stewardship and moral responsibility. However, discrepancies between stated willingness and actual behaviour, termed the attitude–behaviour gap, remain an area of concern. Prior studies suggest that while willingness is necessary, structural factors such as socioeconomic constraints may influence the translation of intent into action [54]. Previous studies confirm that the willingness to pay for a sustainable environment influences environmental actions [55,56]. However, some studies claim that most pro-environmental actions are costly and people put less effort into them [57]. People are not ready to pay for environmental action from their income. Hence, based on this view, our second hypothesis is as follows:

H2. *Willingness to give income for environmental protection (WILLINESS_ENVTPROT) is negatively associated with higher ecological action levels.*

Following Stern, Dietz, Abel, Guagnano, and Kalof [32]'s value–belief–norm (VBN) theory, we constructed a hypothesis that tests value orientation and trust in people to enhance environmental engagement. As conceptualised by Inglehart's value change theory, postmaterialist values prioritise ecological concerns over material needs. These values are associated with increased participation in environmental initiatives and higher willingness to adopt sustainable practices [53]. Social trust also plays a crucial role in collective environmental actions, facilitating cooperation and reducing the perception of free riding

in environmental efforts [49]. Studies show that individuals with higher trust in others are more likely to contribute to communal environmental solutions, underlining the significance of trust as a social enabler [20]. As a rule of thumb, environmental concerns are typically higher among those who adhere strongly to attitudes, values, and norms [42]. Numerous studies confirm that value orientation and trust in people are the key indicators influencing environmental engagement [55,58]. Hence, our third hypothesis is as follows:

H3. *Postmaterialist value orientation (VALUE_ORIENTATION) and trust in people (TRUST_PEOPLE) enhance environmental engagement.*

3. Methods

We followed the WVS [13] (time-series dataset from 1981–2022. We referred to the "WVS Time Series 1981 2022 Variables Report V5.0" and the WVS Master Survey Questionnaire to identify our study's key variables of interest. First, we selected the key variables for the study (as defined in Appendix A: Definitions of Variables). Our selection was based on environmental action, engagement, membership, values, beliefs, and demographic variables. We found environmental action data from the 1995, 1996, 1997, 1998, and 1999 surveys (Panel A of Table 1). So, due to inconsistency in how our key variables were measured and coded in the subsequent waves of surveys, we could not include survey response data after 1999. For our analysis, we included all survey information related to environmental action.

Our dependent variable was ENVT_ACTION, an ordinal composite index ranging from 0 to 5, representing the number of environmental actions an individual takes. Our key independent variables were (1) environmental membership (ENVT_MEM; ENVT_MEM_ACTIVE; ENVT_MEM_INACTIVE), (2) willingness to protect the environment (*WILLINESS_ENVTPROT*), and (3) cultural and social values (VALUE_ORIENTATION; TRUST_PEOPLE; BELIEVE_GOD). We used control variables such as gender, age, education level, income level, urban/rural community, and immigration status.

We used an ordered logit regression model since the dependent variable, *ENVT_ACTION*, was an ordinal scale (0–5). We included clustered standard errors at the country level to account for potential intra-country correlations. Ordinal variables have meaningful order but not equal intervals between values. We followed the following ordered logic model equation:

$$ENVT\_ACTION_i = \beta_0 + \beta_1 \ ENVT\_MEM_i + \beta_2 \ WILLINESS\_ENVTPROT_i + \beta_3 \ VALUE\_ORIENTATION_i + \beta_4 \ TRUST\_PEOPLE_i + \beta_5 \ BELIEVE\_GOD_i + \beta_6 \ GENDER\_F_i + \beta_7 \ log\_AGE_i + \beta_8 \ EDU\_LEVEL_i + \beta_9 \ INCOME\_LEVEL_i + \varepsilon_i$$

Our dependent variable was ENVT_ACTION, a composite score that reflects individual environmental behaviours across five domains: choosing environmentally friendly products, recycling, reducing water consumption, participating in environmental meetings or petitions, and contributing to environmental organisations. It ranges from 0 (no action) to 5 (engagement in all actions). Our independent variables were ENVT_MEM, WILLINESS_ENVTPROT, VALUE_ORIENTATION, TRUST_PEOPLE, and BELIEVE_GOD. ENVT_MEM represents membership in environmental organisations (both active and inactive) and serves as a critical predictor, capturing the influence of institutional support on environmental actions. Similarly, WILLINESS_ENVTPROT reflects a willingness to sacrifice income for environmental protection, representing intrinsic pro-environmental attitudes. VALUE_ORIENTATION differentiates postmaterialists, prioritising environmental concerns, from materialists, measuring value-driven environmental behaviours. TRUST_PEOPLE captures the social trust that may facilitate collective action and cooperative environmental behaviour, and BELIEVE_GOD reflects the potential influence of spiritual or religious beliefs on environmental stewardship. We used GENDER_F, Log_AGE, EDU_LEVEL, and INCOME_LEVEL as the control variables.

Table 1. Sample distribution.

Panel A: Response Selection	
WVS data exploration from WVS time series 1981–2022	443,488
Less: missing	4739
Less: missing values of environmental actions	357,436
Final observations (1995–1999)	81,313

Panel B: Year-Wise Responses

Year	Freq.	Percent	Cum.
1995	16,681	20.51	20.51
1996	32,321	39.75	60.26
1997	14,167	17.42	77.69
1998	13,395	16.47	94.16
1999	4749	5.84	100
Total	81,313	100	

Panel C: Country-Wise Responses

Country	Freq.	Percent	Country	Freq.	Percent	Country	Freq.	Percent
Colombia	6025	7.41	Serbia	1280	1.57	Great Britain	1093	1.34
South Africa	2935	3.61	El Salvador	1254	1.54	Bulgaria	1072	1.32
Ukraine	2811	3.46	South Korea	1249	1.54	Japan	1054	1.3
USA	2742	3.37	Romania	1239	1.52	Estonia	1021	1.26
Argentina	2359	2.9	Switzerland	1212	1.49	Lithuania	1009	1.24
Belarus	2092	2.57	Peru	1211	1.49	Slovenia	1007	1.24
Australia	2048	2.52	Spain	1211	1.49	Chile	1000	1.23
Russia	2040	2.51	New Zealand	1201	1.48	Uruguay	1000	1.23
India	2040	2.51	Venezuela	1200	1.48	Albania	999	1.23
German Federal Republic	2026	2.49	Bosnia and Herzegovina	1200	1.48	Macedonia	995	1.22
Sweden	2024	2.49	Latvia	1200	1.48	Finland	987	1.21
Georgia	2008	2.47	Philippines	1200	1.48	Moldova	984	1.21
Azerbaijan	2002	2.46	Croatia	1196	1.47	Taiwan ROC	780	0.96
Armenia	2000	2.46	Puerto Rico	1164	1.43	Pakistan	733	0.9
Nigeria	1996	2.45	Poland	1153	1.42	Hungary	650	0.8
Turkey	1907	2.35	Czechia	1147	1.41	Dominican Republic	417	0.51
Bangladesh	1525	1.88	Brazil	1143	1.41	Montenegro	240	0.3
Mexico	1510	1.86	Norway	1127	1.39			
China	1500	1.84	Slovakia	1095	1.35			

Notes: This table presents the response selection in Panel A, year-wise responses in Panel B, and country-wise responses in Panel C.

4. Results

4.1. Descriptive Statistics

We present the respondents' year-wise and country-wise report information in Panels B and C of Table 1. In 1995, there were 16,681 responses, accounting for 20.51% of the total. This was followed by 32,321 responses in 1996 (39.75%), 14,167 in 1997 (17.42%), 13,395 in 1998 (16.47%), and 4749 in 1999 (5.84%). Together, these responses add up to the complete dataset of 81,313 observations, with the cumulative percentages demonstrating the progressive contribution of each year to the total.

Panel C of Table 1 provides a country-wise breakdown of the responses. The largest contributions came from Colombia (6025 responses, 7.41%), followed by South Africa (2935, 3.61%), Ukraine (2811, 3.46%), and the USA (2742, 3.37%). A broad range of other countries contributed smaller proportions, with some countries contributing fewer than 1000 responses each. This panel highlights the diverse geographic coverage of the dataset, reflecting a wide range of countries and response frequencies.

We present the responses specific to environmental action in Figure 1. The Australian responses reveal a higher preference for environmental action, followed by those of Germany, South Korea, New Zealand, Puerto Rico, and Taiwan.
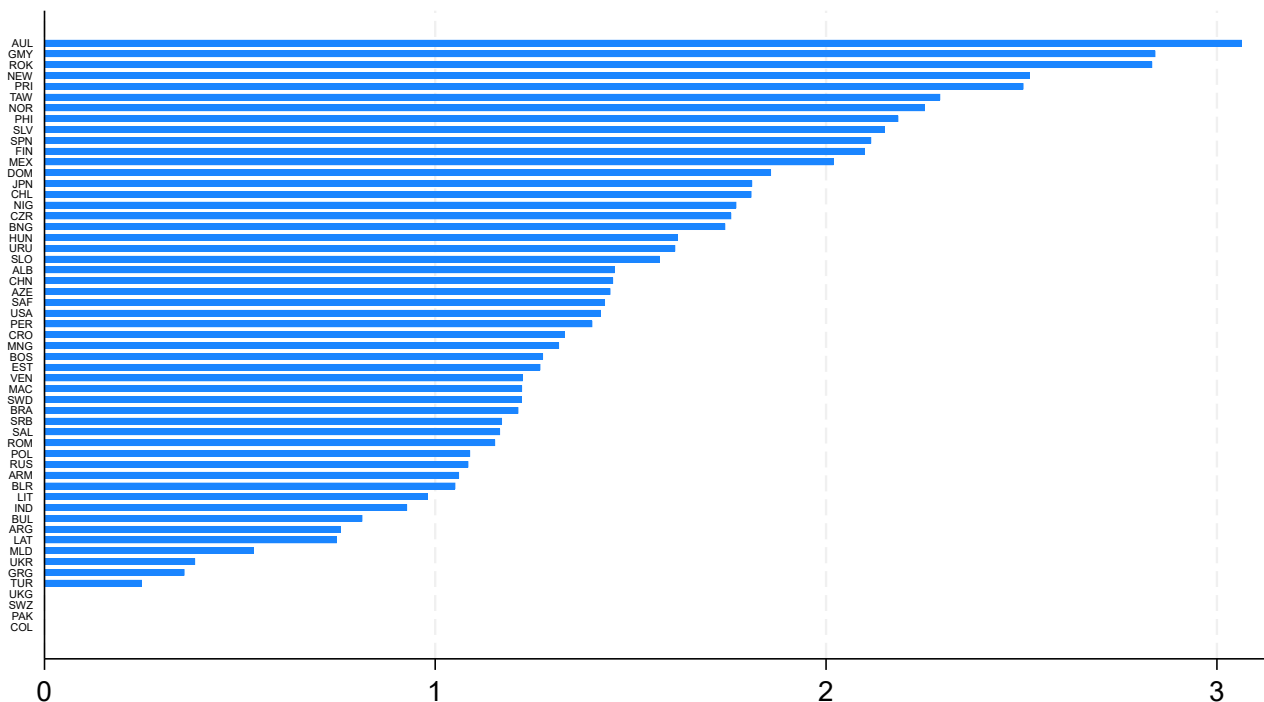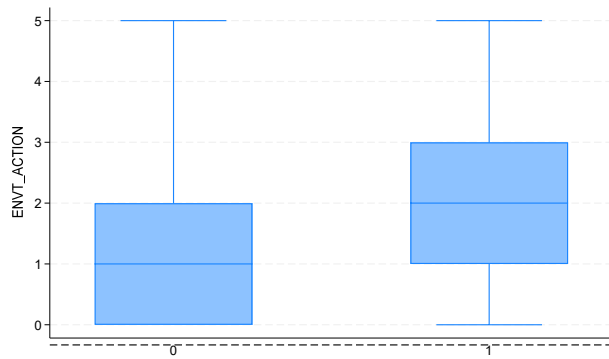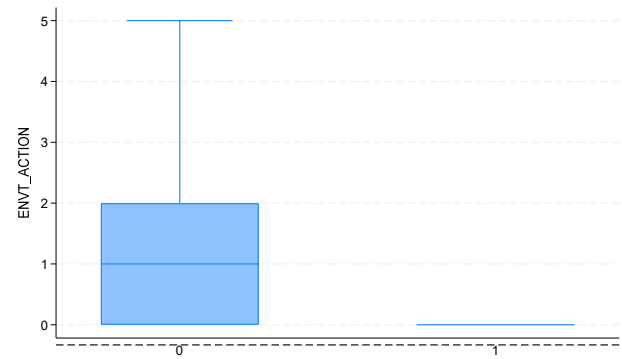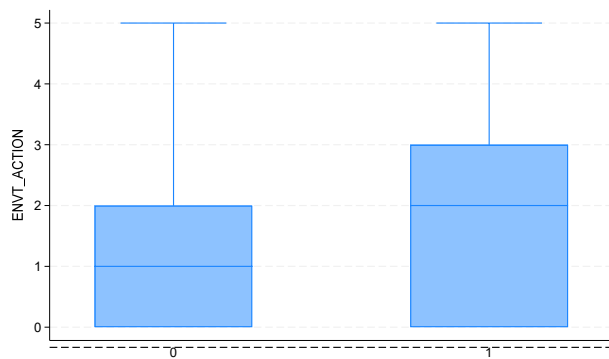

Figure 1. Means of ENVT_ACTION.

Similarly, we present Figure 2, which shows the environmental action by membership, willingness to pay, value orientation, trust in people, belief in God, and gender in the boxplot to distinguish the independent variables with environmental action. Panel A of Figure 2 shows that active membership has a significant role in environmental action, which is associated with our a priori hypothesis. Panel B of Figure 2 shows that people are not interested in contributing part of their income to environmental activities. Panel C of Figure 2 shows that postmaterialist values lead to a higher orientation towards environmental action. Panel D of Figure 2 shows that trust in people has significantly led to higher involvement in environmental action. We find similar responses in environmental action relevant to belief in God and gender (Panels E and F of Figure 2).
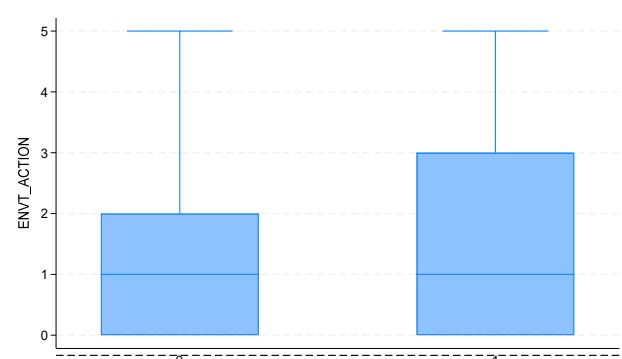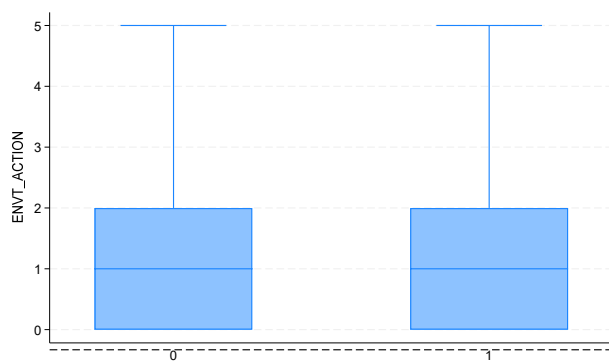
Panel A: Environmental membership

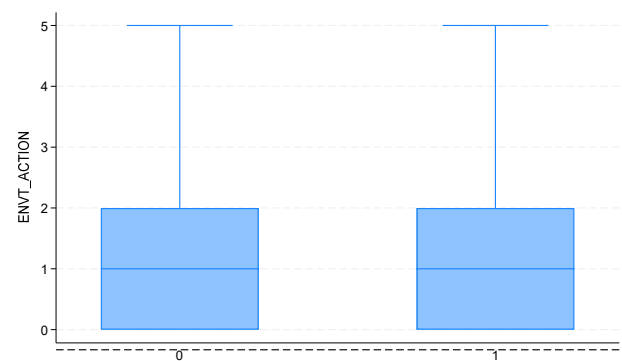Panel B: Willingness to contribute part of income

Panel C: Value orientation

Panel D: Trust in people

Panel E: Belief in God

Panel F: Gender_Female

Figure 2. Boxplots of environmental action by membership, willingness to pay, value orientation, trust in people, belief in God, and gender.

When we classify environmental action by gender and membership (see Figure 3), we find that female members are more motivated towards environmental action than male members. These results reveal that environmental membership to females is more pronounced in environmental action.

Table 2 reports the descriptive statistics of our survey results. Panel A shows the distribution of the environmental action responses (ENVT_ACTION) across different years. The most common response is "0", which represents no environmental action, with 33,545 individuals across the years. Responses showing increasing engagement in environmental actions (from 1 to 5) decrease progressively, with fewer individuals taking more significant action. Notably, the highest engagement (score 5) is quite low, with only 1737 individuals. This suggests that most respondents reported minimal environmental engagement, with a small proportion actively participating in higher levels of action.
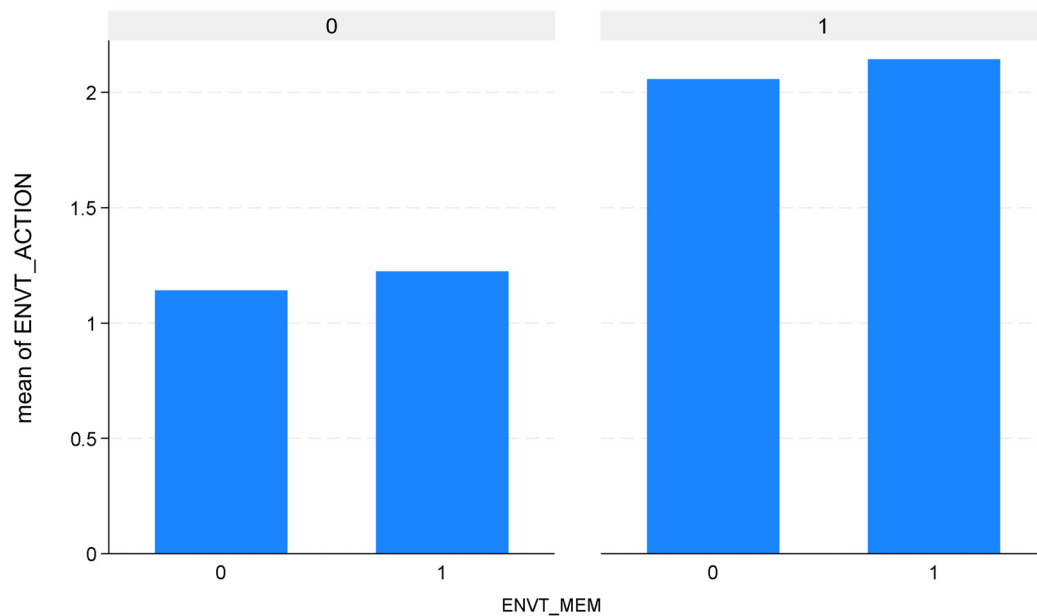
Figure 3. Graph bar of ENVT_ACTION over (GENDER_F) by (ENVT_MEM). The figure presents the bar graph of environmental action over gender (1 for female and 0 for male) by environmental membership (1 for membership and 0 for no membership).

Table 2. Year-wise environmental action responses and means of variables.

Panel A: Environmental Action Responses						
	Survey Year					
Environmental Action	1995	1996	1997	1998	1999	Total
0	3707	12,845	6752	6483	3758	33,545
1	3350	7197	2884	2063	520	16,014
2	3729	5699	2099	2359	471	14,357
3	3708	4410	1721	1738	0	11,577
4	1502	1548	520	513	0	4083
5	685	622	191	239	0	1737
Panel B: Mean Values of Variables						
ENVT_ACTION			1.285			
ENVT_MEM			0.109			
WILLINESS_ENVTPROT			0.004			
VALUE_ORIENTATION			0.108			
TRUST_PEOPLE			0.242			
BELIEVE_GOD			0.722			
GENDER_F			0.520			
Log_AGE			3.637			
EDU_LEVEL			1.910			
INCOME_LEVEL			3.790			

Notes: This table presents the environmental action responses by survey year in Panel A and the means of the values of the variables in Panel B. Definitions of variables are available in Appendix A.

Panel B of Table 2 reveals that environmental action (ENVT_ACTION) is low in the sample, with an average score of 1.285, indicating minimal engagement in pro-environmental behaviours. Environmental membership (ENVT_MEM) is also quite low, with only 10.9% of respondents involved in environmental organisations. Willingness to contribute income for environmental protection (WILLINESS_ENVTPROT) is almost negligible, averaging just 0.4%. Other variables show a predominantly conservative demographic: only 10.8% identify with postmaterialist values (VALUE_ORIENTATION), 24.2% trust people (TRUST_PEOPLE), and a significant majority (72.2%) believe in God (BELIEVE_GOD). The gender distribution is almost balanced (52% female), with an average age of around 38 years (Log_AGE = 3.637). Educational attainment is moderately low, and income levels tend to cluster around the middle of the scale. These findings suggest that the sample exhibits limited pro-environmental behaviours and engagement, with a relatively conservative socio-demographic profile.

Table 3 reports the distribution of environmental actions (ENVT_ACTION) by gender (male/female) and membership status (ENVT_MEM and Non-ENVT_MEM) across ENVT_ACTION, along with the results of a difference test using a t-test. Panel A focuses on the environmental action of individuals based on membership status (ENVT_MEM). For male and female participants, a higher number of actions are reported in lower membership categories (0–5), with a slight gender difference in each category. The total number of respondents in each category reflects these trends, showing that membership has some influence on participation in environmental action.

Table 3. Cross-tabulation.

ENVT_ACTION	Male	Female	Total	
Panel A: ENVT_MEM				
0	982	841	1823	
1	915	880	1795	
2	840	793	1633	
3	882	783	1665	
4	537	545	1082	
5	393	433	826	
Panel B: Non-ENVT_MEM				
0	15,548	16,113	31,661	
1	6785	7411	14,196	
2	5946	6740	12,686	
3	4358	5516	9874	
4	1360	1626	2986	
5	418	489	907	
Panel C: Difference Test				
	Male	Female	Non-ENVT_MEM	ENVT_MEM
Overall mean ENVT_ACTION	1.25	1.31	1.18	2.098
t-value	−7.1858 ***		−60.5504 ***	

Notes: This table presents the cross-tabulation of environmental action and difference tests. Panel A presents the cross-tabulation by environmental membership and gender. Panel B presents the cross-tabulation by non-environmental membership and gender. Panel C shows the difference tests of environmental action by gender. *** denotes the significance at the 1% level. Definitions of variables are available in Appendix A.

Panel B of Table 3 compares the same variable (ENVT_ACTION) for those not involved in environmental membership (Non-ENVT_MEM). This section demonstrates a significant difference in the number of actions reported between males and females, with females generally reporting more environmental actions across categories. The total number of

responses here is notably higher than that in Panel A, suggesting that a larger portion of the population does not belong to environmental membership groups.

Panel C of Table 3 summarises the differences in the test results between males, females, and individuals with/without environmental membership. The overall mean for environmental action is higher for females (1.31) than males (1.25). The mean for individuals with environmental membership is significantly higher (2.098) than that for those without membership (1.18). The t-values (-7.1858 *** for gender and -60.5504 *** for membership) indicate statistically significant differences, emphasising the influence of both gender and membership on environmental action participation.

The correlation results in Table 4 show the relationships between the variables related to environmental actions, attitudes, and demographic factors. Environmental action (ENVT_ACTION) is positively associated with environmental membership (ENVT_MEM) ($r = 0.21$) and education level (EDU_LEVEL) ($r = 0.14$) but only weakly associated with income level (INCOME_LEVEL) ($r = 0.06$) and value orientation (VALUE_ORIENTATION) ($r = 0.12$). Environmental membership also weakly correlates with education level ($r = 0.10$). Interestingly, willingness to pay for environmental protection (WILLINESS_ENVTPROT) shows a weak negative correlation with ENVT_ACTION ($r = -0.06$) but positive associations with income level ($r = 0.03$). Belief in God (BELIEVE_GOD) and gender (GENDER_F) generally exhibit weak correlations with other variables, with belief in God slightly negatively related to trust in people (TRUST_PEOPLE) ($r = -0.06$) and income level ($r = -0.08$). Finally, log-transformed age (Log_AGE) is negatively associated with education level ($r = -0.20$), reflecting demographic nuances. All correlations are statistically significant (*** $p < 0.001$), except a few marked with * $p < 0.05$ or nonsignificant values.

Table 4. Correlation analysis.

Variable	1	2	3	4	5	6	7	8	9	10
1. ENVT_ACTION	1.00									
2. ENVT_MEM	0.21 ***	1.00								
3. WILLINESS_ENVTPROT	−0.06 ***	−0.02 ***	1.00							
4. VALUE_ORIENTATION	0.12 ***	0.04 ***	0.02 ***	1.00						
5. TRUST_PEOPLE	0.09 ***	0.03 ***	0.01 ***	0.06 ***	1.00					
6. BELIEVE_GOD	0.03 ***	0.04 ***	0.00	−0.03 ***	−0.06 ***	1.00				
7. GENDER_F	0.03 ***	−0.02 ***	−0.00	−0.01 ***	−0.01 *	0.08 ***	1.00			
8. Log_AGE	0.02 ***	−0.05 ***	0.01 ***	−0.07 ***	0.04 ***	0.01 *	0.00	1.00		
9. EDU_LEVEL	0.14 ***	0.10 ***	0.02 ***	0.10 ***	0.06 ***	0.02 ***	−0.04 ***	−0.20 ***	1.00	
10. INCOME_LEVEL	0.06 ***	0.02 ***	0.03 ***	0.07 ***	0.08 ***	−0.08 ***	−0.05 ***	−0.05 ***	0.37 ***	1.00

Notes: This table presents the Pearson correlation analysis. ***, and * denote significance at 1%, and 10% levels, respectively. Definitions of variables are available in Appendix A.

4.2. Baseline Results

We explore the factors influencing environmental action (ENVT_ACTION), a composite measure derived from five activities: choosing environmentally friendly products, recycling, reducing water consumption, attending meetings/signing petitions, and contributing to environmental organisations. Table 5 shows the overall results. Column 1 of Table 5 shows that individuals who are members of environmental organisations (active or inactive) have a significant positive association with environmental actions. Membership increases the likelihood of engaging in these actions by 1.0536 units ($\beta = 1.0536$, $p < 0.001$). Similarly, while identifying the separate effects of active and inactive membership on environmental action, we find that both play significant roles, and that inactive membership even has a higher coefficient ($\beta = 1.6958$, $p < 0.001$) than active membership ($\beta = 0.8342$, $p < 0.01$), indicating that those who are not active members do actively apply environmentally friendly activities.

Table 5. Baseline results.

Panel A: Exploring Environmental Engagement Using Ordered Logit Model		
	(1)	(2)
	ENVT_ACTION	ENVT_ACTION
ENVT_MEM	1.0536 ***	
	(0.00)	
ENVT_MEM_ACTIVE		0.8342 **
		(0.01)
ENVT_MEM_INACTIVE		1.6958 ***
		(0.00)
WILLINESS_ENVTPROT	−18.5561 ***	−18.8010 ***
	(0.00)	(0.00)
VALUE_ORIENTATION	0.5837 ***	0.5765 ***
	(0.00)	(0.00)
TRUST_PEOPLE	0.3073 **	0.3072 **
	(0.02)	(0.02)
BELIEVE_GOD	0.1120	0.1086
	(0.64)	(0.65)
GENDER_F	0.1446 ***	0.1511 ***
	(0.00)	(0.00)
Log_AGE	0.2884 **	0.2904 **
	(0.02)	(0.01)
EDU_LEVEL	0.2964 ***	0.2987 ***
	(0.01)	(0.01)
INCOME_LEVEL	0.0049	0.0045
	(0.85)	(0.86)
Pseudo R^2	0.0260	0.0275
N	81,134	81,134

Panel B: Odds Ratios						
ENVT_ACTION	Odds Ratio	Robust Std. Err.	z	$p > z$	[95% Conf. Interval]	
ENVT_MEM	2.8679	0.0657	46.0000	0.0000	2.7420	2.9996
WILLINESS_ENVTPROT	0.0000	0.0000	−288.5100	0.0000	0.0000	0.0000
VALUE_ORIENTATION	1.7926	0.0425	24.6300	0.0000	1.7113	1.8778
TRUST_PEOPLE	1.3597	0.0217	19.2800	0.0000	1.3179	1.4029
BELIEVE_GOD	1.1186	0.0171	7.3300	0.0000	1.0855	1.1526
GENDER_F	1.1556	0.0155	10.7800	0.0000	1.1256	1.1863
Log_AGE	1.3343	0.0227	16.9800	0.0000	1.2906	1.3795
EDU_LEVEL	1.3450	0.0132	30.1900	0.0000	1.3194	1.3711
INCOME_LEVEL	1.0049	0.0026	1.9100	0.0570	0.9999	1.0100
/cut1	1.6595	0.0698			1.5226	1.7963
/cut2	2.4962	0.0701			2.3588	2.6336
/cut3	3.3939	0.0705			3.2558	3.5320
/cut4	4.7072	0.0714			4.5671	4.8472
/cut5	6.0063	0.0739			5.8614	6.1512

Notes: This table presents the ordered logit regression models. Panel A shows the regression, and Panel B shows the odds ratios. T-values are in parentheses. ***, and ** denote significance at 1%, and 5% levels, respectively. See Appendix A for variable definitions.

While testing the effect of the willingness to contribute income to environmental protection, we find negative and significant results, suggesting that people do not like contributing part of their income to environmental actions. However, individuals with postmaterialist values are significantly more likely to engage in environmental actions. Similarly, trust in people also has a positive impact on environmental actions. However, belief in God does not have a statistically significant effect on environmental actions.

Panel B of Table 5 presents the odds ratios that allow us to interpret our Panel A coefficients more easily and further indicate the likelihood of being in a higher category of environmental action for a one-unit increase in each predictor, holding all else constant. Predictors with odds ratios greater than 1 have a positive effect, while those with odds ratios less than 1 have a negative impact. Further to our explanation, the significant positive effects of ENVT_MEM (odds ratio: 2.8679) suggest that higher environmental memory nearly triples the odds of higher environmental action. Similarly, VALUE_ORIENTATION (odds ratio: 1.7926) indicates that individuals with stronger environmental value orientations are approximately 1.8 times more likely to engage in environmental action. Trust in people (TRUST_PEOPLE) also has a positive effect, with an odds ratio of 1.3597, showing that higher interpersonal trust increases the likelihood of engaging in environmental actions. Additionally, belief in God (BELIEVE_GOD) has a modest positive effect (odds ratio: 1.1186), as does being female (GENDER_F), with an odds ratio of 1.1556. Panel B for Table 5 also includes threshold parameters (/cut1 to/cut5), representing the cut points separating the categories of ENVT_ACTION. For instance, /cut1 is 1.6595, representing the log odds of moving from the lowest category to the second-lowest category, while /cut5 is 6.0063, representing the log odds of being in the highest category. The model highlights the significant roles of environmental membership, value orientation, and trust in shaping environmental actions.

4.3. Additional Models

We find that active environmental membership leads to environmental action. To ensure the robustness and reliability of our findings, we complemented our baseline OLOGIT model with additional analytical frameworks, including the generalised ordered logit regression (GOLR), ordinal probit (OPROBIT), and multilevel models in Table 6. While the OLOGIT model was well suited for analysing our ordinal dependent variable, employing GOLR allowed for flexibility in handling alternative distributional assumptions. Similarly, OPROBIT served as a valuable counterpart, enabling us to test whether our results were sensitive to the choice between logistic and probit specifications. Furthermore, multilevel models accounted for hierarchical structures in the data, such as responses from different regions, capturing variation across multiple levels. Across these models, we consistently observe similar relationships, underscoring our findings' robustness. This multifaceted approach strengthens the credibility of our results by demonstrating their stability under diverse methodological perspectives. Overall, we strongly claim that environmental membership encourages involvement in environmental action, which provides strong evidence to support the hypotheses. Similarly, we find that people are not willing to contribute part of their income to the environment, suggesting that people do not like to contribute additionally, as they already contribute in the name of personal taxes. All the other variables, including the controls, have similar associations with environmental actions.

4.4. Latent Class Analysis

We report the latest class analysis in Table 7. The results show that ENVT_MEM consistently portrays a strong, significant positive effect (e.g., $\beta = 0.8787$, $p < 0.01$), reinforcing the critical role of membership in environmental organisations. Conversely, WILLINESS_ENVTPROT has a significant negative association (e.g., $\beta = -1.2747$, $p < 0.01$), suggesting a disconnect between willingness to pay and actual behaviour, likely due to external barriers. Similarly,

VALUE_ORIENTATION exhibits a positive and significant effect ($\beta = 0.4579$, $p < 0.01$), confirming that postmaterialist values drive pro-environmental behaviour. Similarly, TRUST_PEOPLE is positively associated with environmental action ($\beta = 0.2515$, $p < 0.01$), highlighting the role of social trust in fostering collective environmental engagement. The high variance in ENVT_ACTION (Var = 1.7504, $p < 0.01$) underlines significant behavioural heterogeneity, validating the need for a latent class approach to account for diverse subgroup dynamics. This analysis provides a robust foundation for targeted interventions addressing specific motivational and contextual factors.

Table 6. Additional models.

DV = ENVT_ACTION	Generalised Ordered Logit Regression					Ordinal Probit Regression	Multilevel Ordinal Logistic Regression
	(0)	(1)	(2)	(3)	(4)		
ENVT_MEM	1.0133 ***	0.8444 ***	0.9944 ***	1.4628 ***	1.9526 ***	0.6448 ***	1.0570 ***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
WILLINESS_ENVTPROT	−18.7377	−18.7377	−18.7377	−18.7377	−18.7377	−7.3363	−19.7038
	(0.97)	(0.97)	(0.97)	(0.97)	(0.97)	(1.00)	(0.98)
VALUE_ORIENTATION	0.3437 ***	0.5748 ***	0.6683 ***	0.8195 ***	0.8223 ***	0.3277 ***	0.5677 ***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
TRUST_PEOPLE	0.2600 ***	0.3137 ***	0.3357 ***	0.3890 ***	0.3913 ***	0.1836 ***	0.3155 ***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
BELIEVE_GOD	0.1993 ***	0.1167 ***	0.0297	0.0888 ***	0.1064 *	0.0820 ***	0.1425 ***
	(0.00)	(0.00)	(0.13)	(0.01)	(0.06)	(0.00)	(0.00)
GENDER_F	0.1082 ***	0.1336 ***	0.1709 ***	0.1549 ***	0.1626 ***	0.0770 ***	0.1312 ***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Log_AGE	0.2620 ***	0.2587 ***	0.3571 ***	0.3699 ***	0.6065 ***	0.1785 ***	0.2968 ***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
EDU_LEVEL	0.2540 ***	0.2625 ***	0.3204 ***	0.4166 ***	0.4346 ***	0.1666 ***	0.2789 ***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
INCOME_LEVEL	−0.0098 ***	0.0068 **	0.0151 ***	0.0320 ***	0.0452 ***	0.0026 *	0.0039
	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)	(0.07)	(0.11)
Constant	YES	YES	YES	YES	YES	NO	NO
Pseudo R^2	0.0309					0.0273	
N	81,134					81,134	81,134

Notes: This table presents the generalised ordered logit regression, ordinal probit regression, and multilevel ordinal logistics regression. T-values are in parentheses. ***, **, and * denote significance at 1%, 5%, and 10% levels, respectively. See Appendix A for variable definitions.

Table 7. Latent class analysis.

	(1)	(2)	(3)	(4)
	ENVT_ACTION	ENVT_ACTION	ENVT_ACTION	ENVT_ACTION
ENVT_ACTION				
ENVT_MEM	0.9134 ***	0.9082 ***	0.8892 ***	0.8787 ***
	(0.00)	(0.00)	(0.00)	(0.00)
WILLINESS_ENVTPROT		−1.1899 ***	−1.2516 ***	−1.2747 ***
		(0.00)	(0.00)	(0.00)
VALUE_ORIENTATION			0.4792 ***	0.4579 ***
			(0.00)	(0.00)
TRUST_PEOPLE				0.2515 ***
				(0.00)
Constant	1.1847 ***	1.1899 ***	1.1405 ***	1.0832 ***
	(0.00)	(0.00)	(0.00)	(0.00)
va r (e.ENVT_ACTION)	1.7895 ***	1.7840 ***	1.7620 ***	1.7504 ***
	(0.00)	(0.00)	(0.00)	(0.00)
N	81,134	81,134	81,134	81,134

Notes: This table presents the latent class analysis. *** denotes significance at 1% level. See Appendix A for variable definitions.

4.5. Marginal Effect

We report Figure 4 to visualise the marginal effects. Panels A and B of Figure 4 show the magnitude and direction of the relationships of our key independent variables with the dependent variable, showing the marginal effect of ENVT_MEM, WILLINESS_ENVTPROT, VALUE_ORIENTATION, and TRUST_PEOPLE on the predicted probability of the outcome variable (ENVT_ACTION). This helps to understand how changes in each variable impact the likelihood of different outcomes on the dependent variable (ENVT_ACTION). For example, a positive marginal effect for ENVT_MEM means that the probability of taking more environmental actions increases as membership increases. The margins plot visualises these marginal effects, helping assess the relationships' magnitudes and directions.

Panel A: Effects of EVVT_MEM, VALUE_ORIENTATION, and TRUST_PEOPLE

Panel B: Effects of WILLINGNESS_ENVTPROT
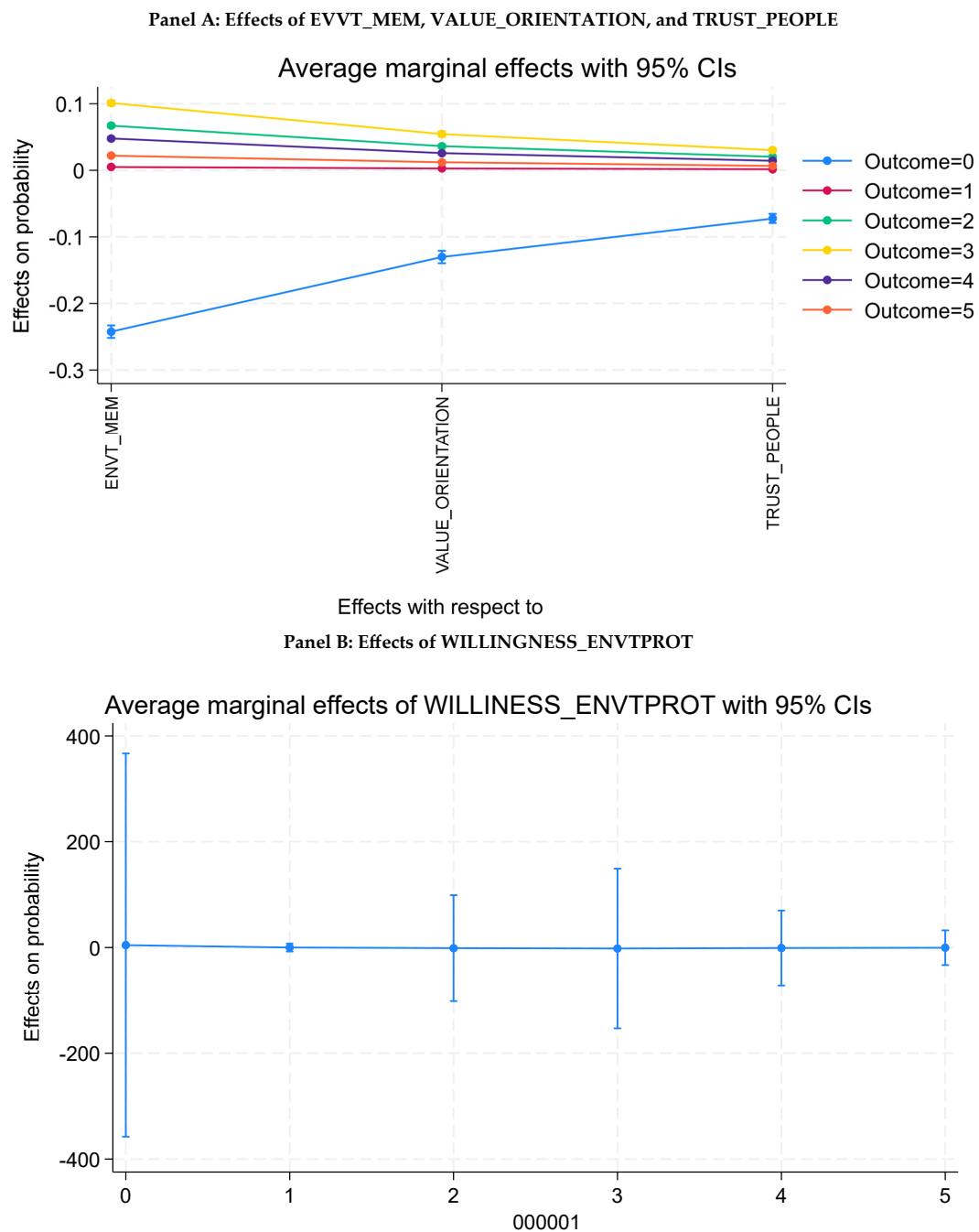
Figure 4. Marginal effects.

5. Conclusions

Our study explores the relationship between individual characteristics, organisational membership, and social values in shaping global environmental engagement, leveraging insights from the theory of planned behaviour (TPB) and the value–belief–norm (VBN) framework. Our findings emphasise that variables such as organisational membership (both active and inactive), postmaterialist values, trust in others, education, gender, and age positively influence environmental actions. These factors reflect the motivational and normative dimensions emphasised by the VBN theory and the perceived control and social influence outlined in the TPB.

Based on the world survey data, our study establishes the association between people's membership and environmental actions. Though the financial factor is dominant in hindering active participation, other social values and norms support active involvement in environmental action. This counterintuitive result highlights an attitude–behaviour gap, where the expressed intent does not translate into concrete action, possibly due to structural or situational barriers. This insight aligns with the TPB's [59] acknowledgement of the discrepancy between intention and actual behaviour when perceived barriers exist.

This study affirms the central role of organisational membership and social norms in environmental action, emphasising that while individual willingness and financial capacities may vary, the collective values and perceived norms within a community remain pivotal. Bridging the attitude–behaviour gap will require targeted interventions to reduce structural barriers and strategies to strengthen the alignment between personal values and actionable environmental outcomes. This study fills a critical gap in understanding environmental activism's psychological and social drivers. The specific role of public attitudes towards climate action has been overlooked. By leveraging the World Values Survey (WVS), we integrate key factors such as environmental group membership, willingness to contribute income, values, beliefs, and gender considerations. This strategy provides a thorough understanding of the variables affecting environmental action globally. Finally, our study advances our understanding of climate engagement by offering insightful information about the intricate dynamics influencing environmental activism worldwide. We establish the close connection between environmental membership and action, which aligns with the global sustainability goals by highlighting how environmental membership fosters proactive environmental actions, ultimately contributing to sustainable resource management. By demonstrating the link between participation and tangible ecological outcomes, this study supports policy frameworks aimed at achieving the United Nations Sustainable Development Goals (SDGs), particularly Goals 13 (Climate Action) and 17 (Partnerships for the Goals).

Finally, this study offers valuable insights into the drivers of environmental activism, making meaningful contributions to the advancement of several United Nations Sustainable Development Goals (SDGs). By emphasising the roles of the willingness to contribute financially, environmental membership, and trust in fostering engagement, the research addresses Climate Action by identifying pathways to enhance global environmental responsibility. Furthermore, its focus on diverse demographic variables aligns with Good Health and Well-being, promoting actions that reduce environmental risks to human health. This study's findings also underscore the importance of Responsible Consumption and Production by encouraging sustainable behavioural shifts. Finally, its emphasis on fostering collective trust and participation in environmental efforts supports the development of Sustainable Cities and Communities, highlighting the need for inclusivity and collaboration in addressing global environmental challenges. This holistic approach reinforces this study's relevance to achieving a more sustainable and equitable future.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The present study uses secondary data from the publicly available WVS dataset (https://www.worldvaluessurvey.org, accessed on 14 November 2024).

Appendix A. Definitions of Variables

Dependent Variable	
ENVT_ACTION	Environment action is composed of five variables ranging from 0 to 5. ENVT_ACTION = ENVT_ACTION1 +ENVT_ACTION2 + ENVT_ACTION3 + ENVT_ACTION4 + ENVT_ACTION5 EVT_ACTION1 = (B011==1) // choosing products that are better for the environment ENVT_ACTION2 = (B012==1) // recycling ENVT_ACTION3 = (B013==1) // reducing water consumption ENVT_ACTION4 = (B014==1) // attending meetings, signing petitions ENVT_ACTION5 = (B015==1) // contributing to environmental organisation
Independent variables	
ENVT_MEM	1 = active and inactive membership; 0 = otherwise [A103]
WILLINESS_ENVTPROT	Willingness to give part of income for the environment. We use agree and strongly agree as 1 and 0 as otherwise [B001]
VALUE_ORIENTATION	1 for postmaterialist values and 0 for others (materialist and mixed) [Y002]
TRUST_PEOPLE	1 for trust and 0 for otherwise [A165]
BELIEVE_GOD	1 for yes and 0 for no [F050]
Control variables	
GENDER_F	1 for female and 0 for male [X001]
Log_AGE	Natural logarithm of age [X003]
EDU_LEVEL	1 Lower 2 middle and 3 upper [X025R]
INCOME_LEVEL	1.—Lower step; 2.—second step; 3.—third step; 4.—fourth step; 5.—fifth step; 6.—sixth step; 7.—seventh step; 8.—eighth step; 9.—nineth step; 10.—tenth step [X047_WVS]
COMMUNITY_URBAN	1 for urban and 0 for rural [X050C]

Appendix B.

We present an overview of the World Values Survey (WVS) based on the information available from https://www.worldvaluessurvey.org/WVSContents.jsp (accessed on 14 November 2024):

"The World Values Survey (WVS) is a globally recognized research initiative investigating social, political, and cultural values across different countries. Since its inception in 1981, WVS has provided a comprehensive understanding of how human beliefs and values evolve over time and how they impact societies worldwide. The project is managed by the World Values Survey Association (WVSA) and has conducted seven waves of data collection, with the latest version (Round 7) covering data from 2017 to 2022. [14]

WVS datasets have unique variables reports, questionnaire forms and coding of all. We extracted the Stata survey data file; refer to the WVS7 codebook. We take reference of the questionnaire, ensuring the target variable is as per our area of interest.

WVS collects data on various topics, including democracy, economic development, gender equality, social trust, and environmental concerns. Our primary task in this survey is take key aspects of environmental concerns. One of the key strengths of WVS is its ability to provide detailed individual-level data, allowing researchers to explore micro-level determinants of social and political behaviours. This feature is particularly relevant for environmental engagement and action studies, as it enables scholars to investigate how personal values and beliefs influence ecological attitudes and sustainability-related practices. However, while WVS remains a vital resource, some variables—such as those related to environmental action—are limited to earlier waves (e.g., 1995–1999). Despite this, the dataset remains one of the most comprehensive sources for studying long-term shifts in global environmental consciousness.

As an internationally recognized data source, WVS has been widely used in academic research, policymaking, and global governance. By continuing to expand its coverage and improve methodological rigor, WVS remains instrumental in understanding and addressing the pressing societal challenges of the 21st century."

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