

The Transformation of Social Class Determinants for Environmental Willingness to Pay: Evidence from China (2010 & 2021)

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Abstract: This study uses data from the 2010 and 2021 China General Social Survey (CGSS) to examine the impact and changes of different social class factors (traditional, local, and subjective) on the willingness of Chinese residents to pay for environmental protection. The results show that, compared to 2010, Chinese residents' willingness to pay for environmental protection in 2021 is higher. In 2010, individuals in higher occupational classes, those with a political affiliation, and those with a stronger future class identity had a higher willingness to pay for environmental protection, while individuals in the middle-income group had a relatively lower willingness. However, in 2021, only individuals with a political affiliation, and those with a stronger childhood and future class identity, had significantly higher willingness to pay for environmental protection. The study suggests that, while overall willingness to pay for environmental protection has increased, the influence of traditional social class factors has weakened. Meanwhile, the influence of local class factors, such as political affiliation, and subjective class factors, such as childhood and future class identity, has become stronger.

Keywords: Social Class; Subjective Class; Native Stratification; Willingness to Pay for Environmental Protection; Objective Class.

1. Introduction

With the intensification of global environmental problems, willingness to pay (WTP) for environmental protection and its influencing factors have become a focal point of research across multiple disciplines, particularly economics, psychology, and sociology.

From an economic perspective, WTP refers to the extent to which the public is willing to incur

an economic “loss” for environmental protection [1]. Economics primarily focuses on micro-level factors such as individual or household income [2] and environmental attitudes [3], as well as macro-level policy factors such as government provision of environmental goods, free-riding behavior [4], environmental inspections, satisfaction with government governance, and trust in government. For example, studies show that in countries with low quality of life, individuals with left-wing political values are less willing to pay environmental taxes [5].

From a psychological perspective, WTP is regarded as an expression of environmental attitudes, and scholars have proposed various psychological models such as the Theory of Planned Behavior [5], models of altruistic and moral behavior, and the Norm-Activation Model [6]. Research has also found that environmental concern and pro-environmental behaviors [7] are among the most important psychological determinants of WTP.

While the sociological perspective also recognizes WTP as a form of environmental attitude [5] it places greater emphasis on the role of social structural variables. Existing studies have identified generalized trust, social capital, materialist and post-materialist values, regional differences [6], as well as economic status, educational level, and value orientations [5] as important sociological factors influencing WTP. In summary, prior research from different disciplinary perspectives has directly or indirectly confirmed the relationship between social class and WTP. However, two main research gaps remain: (1) In terms of class variable settings, most studies have focused on traditional class variables (e.g., education, income, occupation), with little attention given to the internal differentiation of subjective class and few studies examining localized stratification factors such as hukou, Political

affiliation, work-unit type, and housing. (2) Few studies have investigated how the effects of different social class variables on WTP change over time, from the perspective of social transformation.

Against this backdrop, the present study incorporates traditional class factors (e.g., income), localized class factors (e.g., hukou), and subjective class factors (e.g., childhood class identity) into a unified framework. Using data from CGSS 2010 and CGSS 2021, it examines both the effects and temporal changes of different class variables on WTP. The findings aim to provide empirical evidence for developing policies that enhance residents' awareness of, and participation in, environmental governance.

2. Theoretical Framework and Hypotheses

2.1 WTP for the Environment from the Perspective of Social Change

Social change refers to the systemic transformation of social structures and functions, including economic transitions, value shifts, and changes in social structures, culture, technology, and institutions. Social change not only alters people's ability to pay and patterns of resource distribution but also shapes individuals' and groups' environmental awareness, values, and behavioral norms, thereby profoundly influencing residents' Willingness to Pay (WTP) for environmental protection. For example, Ecological Modernization Theory emphasizes guiding different social strata to participate in environmental protection through policy adjustments and market mechanisms [4]. In the process of social change, the strengthening of environmental regulations and the design of incentive mechanisms (such as carbon taxes and green subsidies) may increase residents' attention to environmental protection, thereby enhancing their WTP. Meanwhile, Postmaterialist Theory stresses that environmental awareness and behavior result from a fundamental change in basic value orientations after a society has generally achieved affluence [8]. That is, as living standards rise, values shift from materialism to post-materialism, and the public becomes more concerned about environmental issues, accepts personal responsibility for improving environmental conditions, and consequently shows greater WTP. In addition, with the rise of

the New Ecological Paradigm, the public begins to reassess the relationship between humans and nature, becoming more willing to actively support environmental protection [4], which in turn strengthens WTP. Based on this, we propose:

H1: WTP for the environment protection in China was higher in 2021 than in 2010.

2.2 Traditional Social Class and WTP for the Environment Protection

Social class is one of the core topics in sociological research, aiming to analyze the systemic differences among social members arising from factors such as economy, education, occupation, and power. These differences not only determine individuals' positions within the social structure but also affect their capacity to allocate and access resources [3].

In the 1920s, Weber systematically proposed a multidimensional theory of social stratification, highlighting three distinct yet interrelated dimensions: wealth (economic status), prestige (social status), and power (political status) [2]. Among these, education, occupation, and income are the most typical variables, which in this study are referred to as traditional class variables.

Regarding educational attainment, existing research has found a positive effect of education level on WTP for environmental protection: individuals with higher education tend to have stronger environmental awareness and greater willingness to pay [9].

Regarding income level, numerous studies have identified a positive correlation between income and WTP: individuals with higher incomes possess stronger payment capacity and are more willing to contribute financially to environmental protection [4]. However, some studies argue that the relationship between income and WTP is moderated by occupational categories [5]. High income does not necessarily increase willingness to pay, but it significantly affects the amount of payment [1].

Regarding occupation type, WTP is higher in the public sector compared to the non-public sector. Public sector employees often have greater access to information and a stronger sense of social responsibility [4]. Studies also show that civil servants, teachers, researchers, students, and employees of enterprises and institutions demonstrate relatively higher WTP than other occupational groups [9]. Further, some research

finds an income-based moderating effect: for instance, WTP is relatively low among businessmen earning over 30,000 yuan, as well as workers, unemployed individuals, students, retirees, and farmers earning below 15,000 yuan, while WTP is higher among civil servants, teachers, lawyers, high-salaried enterprise workers, and soldiers with annual incomes between 15,000 and 30,000 yuan [2].

Based on the above, we propose the following hypotheses:

H2: The higher the traditional class status, the stronger residents' willingness to pay for environmental protection.

H2a: The more years of education an individual has, the stronger their willingness to pay for environmental protection.

H2b: The higher an individual's income, the stronger their willingness to pay for environmental protection.

H2c: The higher an individual's occupational status, the stronger their willingness to pay for environmental protection.

2.3 Native Social Class and WTP for the Environment Protection

However, as State-Centered Theory suggests, the key to analyzing social class lies in understanding a country's ideology, organizational institutions, and social policies. Beyond the traditional class factors, variables such as household registration (*hukou*), Political affiliation, work-unit type [10], and housing property rights have become important factors shaping contemporary Chinese social stratification. In this study, we refer to these as localized class variables [11].

Existing research has found that *hukou* arrangements significantly affect the WTP of urban migrants [11]. Most studies focus on comparisons between urban and rural areas, generally finding that urban residents exhibit significantly higher WTP than rural residents [1]. However, some studies report opposite results, with rural residents showing higher WTP than urban residents [12].

Regarding political affiliation, research indicates that individuals with a political affiliation have higher WTP compared to those without [13].

Regarding work-unit type, findings show that individuals working within the system (state/public sector) demonstrate higher WTP compared to those outside it, including civil servants, teachers, researchers, students, and

employees of public institutions [14]. Similarly, civil servants, teachers, lawyers, high-salaried enterprise employees, and soldiers tend to have higher WTP [3].

Regarding housing property rights, relatively fewer studies exist. Some findings suggest that while housing ownership is not the primary determinant of WTP, residents with self-owned property show relatively smaller differences in WTP [4]. Tenants generally exhibit lower WTP compared to non-tenants, and larger housing area is associated with stronger WTP [2].

Based on this, we propose the following hypothesis:

H3: The closer residents are to the state center, the stronger their willingness to pay for environmental protection.

H3a: Compared to rural residents, urban residents have stronger willingness to pay for environmental protection.

H3b: Individuals with a political affiliation have a stronger willingness to pay for environmental protection compared to those without.

H3c: Compared to those working outside the system, residents working within the system have stronger willingness to pay for environmental protection.

H3d: Compared to residents without housing property, those with housing property have stronger willingness to pay for environmental protection.

2.4 Subjective Social Class and WTP for the Environment Protection

Whether traditional class variables or localized class variables, they both essentially belong to objective class variables. In contrast, subjective class (Class Identity) refers to an individual's perception of their own position within the social hierarchy [15], which in this study is defined as subjective class variables.

According to Maslow's hierarchy of needs, individuals in higher social classes, once their physiological and safety needs are met, tend to pursue higher-level needs (such as social responsibility and environmental protection), which in turn promotes pro-environmental behaviors [15]. The structure of social status and the distribution of resources also determine the level of energy consumption in people's daily lives [3].

Other studies argue that class identity exerts a negative moderating effect between environmental cognition and pro-environmental

behavior in the public domain [16]. Moreover, the time perspective lens suggests that there are differences among early (childhood family class identity), current, and future class identity, which exert distinct influences on behavioral intentions [17].

Based on this, we propose the following hypothesis:

H4: The higher the subjective class status, the stronger residents' willingness to pay for environmental protection.

H4a: The higher one's current class identity, the stronger their willingness to pay for environmental protection.

H4b: The higher one's childhood class identity, the stronger their willingness to pay for environmental protection.

H4c: The higher one's future class identity, the stronger their willingness to pay for environmental protection.

This study not only examines the differentiated effects of three types of class variables—traditional class, localized class, and subjective class—on willingness to pay for environmental protection, but also adopts a longitudinal perspective by comparing how the influence of these class variables on WTP has evolved between 2010 and 2021. Through this temporal comparison, the study seeks to more comprehensively uncover the underlying social-structural determinants of WTP and to provide robust empirical evidence for the design of more targeted and socially responsive environmental policies.

3. Research Design

3.1 Data Source

This study uses data from the 2010 and 2021 waves of the Chinese General Social Survey (CGSS), one of China's most representative national surveys. The CGSS employs a multi-stage stratified probability sampling design, covering 31 provinces, autonomous regions, and municipalities across the country. The survey samples approximately 12,000 households from 100 counties (districts) and 480 residential or village committees. Respondents are Chinese citizens aged 18 and older who have resided at the sampled address for at least one week.

Crucially, questions measuring WTP for environmental protection are included in both the 2010 and 2021 waves, providing a solid foundation for exploring the decadal changes in

residents' environmental attitudes. The CGSS has also maintained long-term consistency in its measurement of objective and subjective class variables since 2010. Notably, it separately measures subjective class identity across three time points (childhood, present, and future), enabling a comprehensive analysis of how social class, from a temporal perspective, influences WTP. The original sample sizes for the CGSS2010 and CGSS2021 were 11,785 and 8,148, respectively. After excluding cases with missing values or other analytical issues, the final analytical samples consist of 2,085 respondents for 2010 and 1,380 for 2021.

3.2 Variable Specification

3.2.1 Dependent Variable: Willingness to Pay (WTP) for Environmental Protection

The CGSS 2021 added a converse indicator: "To what extent are you willing to accept a reduction in the area of national nature reserves for the sake of economic development?" However, factor analysis results show that the factor contribution rate of this indicator is very low, only 0.082. Therefore, this study did not include this indicator in the analysis, which also facilitates longitudinal comparison with the 2010 results. Following the measurement approach of Chi et al. [13], we operationalize WTP using three indicators: "To what extent are you willing to pay higher prices to protect the environment?"; "To what extent are you willing to pay higher taxes to protect the environment?"; and "To what extent are you willing to accept a lower standard of living to protect the environment?". Responses are measured on a 5-point Likert scale from "very unwilling" (1) to "very willing" (5). Respondents who chose "cannot choose" are excluded from the analysis. The dependent variable descriptions are presented in Table 1.

3.2.2 Independent Variable: Social Class Traditional Class Variables (TCV)

These variables, standard in Western class analysis, include education, occupation and income. Education, measured as years of formal schooling which is the longest number of years of formal education received by the respondent in the year of the survey (in years), a continuous variable. Occupation, coded based on the respondent's current job and converted into five categories using the ISCO-88 and ISCO-08 standards: (1) managers and administrators, (2) professionals and technicians, (3) clerks and office workers, (4) service and sales workers,

and (5) production workers and farmers. Others (those marked as military personnel and related occupations in the database, and those who refused to answer) were not included in the analysis and served as dummy variables, with “workers and farmers” as the reference. Income, measured as the respondent's total annual income from the previous year, which includes

all income, including wages, bonuses, subsidies, dividends, net operating income, bank interest, gifts, etc. This variable is continuous, adjusted for the CPI (based on the data published in the 2020 China Statistical Yearbook) and its natural logarithm taken. To account for a potential non-linear relationship, the squared term of income is also included in the regression models.

Table 1. Main Variable Measurement and Descriptive Analysis

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Variables		coding method	2010(n=2085)		2021(n=1380)	
			Mean	S.D.	Mean	S.D.
Independent variable	Traditional Class Variables					
	Years of Education	Years of formal education received during the survey year	9.23	4.40	9.64	4.56
	Occupational Class					
	Managers/Admin	Managers/Admin = 1, others = 0	0.04	0.19	0.02	0.15
	Professionals	Professionals = 1, others = 0	0.06	0.23	0.06	0.23
	Clerks/Office Staff	Clerks/Office Staff=1, others = 0	0.09	0.28	0.06	0.24
	Service/Sales Workers	Service/Sales Workers=1, others = 0	0.09	0.29	0.11	0.32
	Annual Income	Logarithm of total personal income in the year before the survey	8.53	3.28	8.32	4.14
	Property Ownership	Property Ownership=1, others = 0	0.49	0.50	0.50	0.50
	Native Class Variables					
	Agricultural Hukou	Agricultural Hukou =1, others = 0	0.48	0.50	0.56	0.50
	Political Affiliation	Political Affiliation =1, others = 0	0.15	0.35	0.14	0.35
	State-Sector Employment	State-Sector Employment =1, others = 0	0.09	0.29	0.08	0.27
	Subjective Class Variables					
	Childhood Class Identity	Evaluation of family class at age 14	3.04	1.87	3.31	1.95
	Present Class Identity	Evaluation of the current class of oneself	4.10	1.76	4.31	1.83
	Future Class Identity	Evaluation of the future class of oneself after 10 years	5.20	2.12	5.13	2.24
Control variables	Region					
	Eastern	Eastern=1, others = 0	0.41	0.49	0.42	0.49
	Central	Central=1, others = 0	0.36	0.48	0.33	0.47
	Age	Actual age at the time of the survey	47.08	15.23	50.89	17.30
	Male	Male =1, others = 0	0.49	0.50	0.47	0.50
	Has Spouse	Has Spouse =1, others = 0	0.83	0.38	0.70	0.46
Environmental Concern		Degree of concern for environmental issues	3.73	0.97	3.57	0.88

Native Class Variables (NCV): These include hukou, political status, state-sector employment, and property ownership. Agricultural Hukou, a dummy variable (1 = agricultural hukou; 0 = urban hukou, the reference category). Political Affiliation, a dummy variable coded 1 for respondents who reported membership in the ruling political organization and 0 otherwise (the reference category). State-Sector Employment, a dummy variable indicating employment in a state-owned unit (e.g., government agencies, public institutions, state-owned enterprises), with non-state-sector employment as the reference category. Property Ownership, a

dummy variable (1 = owns property rights to their home; 0 = does not, the reference category). Subjective Class Variables (SCV): These variables capture the respondent's self-assessed social standing at three life stages: childhood (age 14), the present, and the future (10 years from now). Each is measured on a 10-point scale, with higher scores indicating a higher perceived class. Childhood Subjective Class (CSC), based on the question, "At age 14, what level was your family at in society?" Present Subjective Class (PSC), based on the question, "Overall, what level are you at in society today?" Future Subjective Class (FSC), based on the question,

"What level do you think you will be at in 10 years?" Respondents who answered "don't know" or "refused to answer" are excluded.

All the independent variable descriptions are presented in Table 1.

3.2.3 Control Variables

Based on existing literature [3], we include several control variables known to influence WTP: region, age, gender, marital status, and a measure of general environmental concern. Among them, the regions are operationalized as the eastern, central, and western regions, which are dummy variables, with the western region as the reference. Age is operationalized as the actual age of the respondents in the year of the survey, which is a continuous variable. Gender is operationalized as the gender of the respondents, which is a dummy variable, with female as the reference. Marital status is operationalized as whether the respondents have a spouse (including married and remarried) in the year of the survey, which is a dummy variable, with the unmarried as the reference. Environmental concern is operationalized as the overall concern of the respondents for environmental issues, ranging from not caring at all to caring very much, with values of 1-5 respectively, which is a continuous variable and cannot be assigned a value of 3. All the control variable descriptions are presented in Table 1.

3.3 Statistical Methods

This study employs SPSS version 20.0 to conduct stepwise regression analyses on the 2010 and 2021 datasets separately. This approach allows us to compare how the influence of the same set of variables on WTP for environmental protection has changed over time. The statistical model is specified as follows, where the dependent variable is WTP for Environmental Protection (WTP_Env), and the independent variables include Traditional Class Variables (TCV), Native Class Variables (NCV), Subjective Class Variables (SCV), and Control Variables (CV):

$$\begin{aligned} \text{WTP}_{\text{Env}} = & \beta_0 + \sum_{i=1}^p \beta_{\text{TSV}_i} \cdot \text{TSV}_i \\ & + \sum_{j=1}^q \beta_{\text{LSV}_j} \cdot \text{LSV}_j + \sum_{k=1}^r \beta_{\text{SSV}_k} \\ & \cdot \text{SSV}_k + \sum_{l=1}^s \beta_{\text{CV}_l} \cdot \text{CV}_l + \epsilon \end{aligned}$$

in,

WTP_Env is the Willingness to Pay for Environmental Protection (the dependent variable).

TSV_i represents the set of traditional class variables (e.g., occupation, income, education).

LSV_k represents the set of native class variables (e.g., hukou status, membership in the ruling political organization).

SSV_j represents the set of subjective class variables (e.g., childhood, present, and future class identity).

β_{CV_l} represents the set of control variables (e.g., gender, age, marital status).

β₀ is the constant term (intercept).

β_{TSV_i}, β_{LSV_j}, β_{SSV_k} are the regression coefficients for their respective independent variables.

ε is the error term, representing the unexplained variance.

I, k, j and l denote the number of variables within the traditional, native, subjective, and control categories, respectively.

4. Results and Analysis

4.1 Changes in Public Willingness to Pay for Environmental Protection

A factor analysis using principal component analysis was conducted on the three WTP indicators for both survey years. As shown in Table 2, after applying a Varimax rotation, the three items—"willingness to pay higher prices," "willingness to pay higher taxes," and "willingness to accept a lower standard of living"—converged into a single latent variable in both the 2010 and 2021 datasets. This single factor explained 76.87% and 70.47% of the total variance for 2010 and 2021, respectively. The Kaiser-Meyer-Olkin (KMO) measures were 0.702 and 0.665 ($p < 0.001$), and the Cronbach's Alpha coefficients were 0.848 and 0.788, indicating strong scale reliability and validity.

The results in Table 2 demonstrate a notable increase in the public's overall WTP for environmental protection from 2010 to 2021, with the mean composite score rising from 49.76 (SD = 24.87) to 51.27 (SD = 22.00). Specifically, willingness to "pay higher prices" and "pay higher taxes" both increased. In contrast, the willingness to "accept a lower standard of living" showed a slight decline. Despite this nuanced finding, the overall upward trend in WTP provides clear support for Hypothesis 1

(H1).

Table 2. Factor Analysis Results for Willingness to Pay (WTP)

Willingness to Pay (WTP) Items	CGSS2010			CGSS2021		
	Mean	S.D.	Communality	Mean	S.D.	Communality
Pay higher prices	3.153	1.135	0.894	3.226	1.104	0.872
Pay higher taxes	2.937	1.125	0.908	3.028	1.142	0.883
Accept a lower standard of living	2.813	1.143	0.826	2.783	1.132	0.757
WTP Composite Score (Factor Score)	49.76	24.87		51.27	22.00	
Eigenvalue	2.306			2.114		
Variance Explained (%)	76.871			70.465		
Cronbach's Alpha	0.848			0.788		

4.2 The Evolving Impact of Traditional Social Class

The results of the stepwise regression analysis on residents' willingness to pay for environmental protection (WTP) are presented in Table 3, Models 1–6. Among them, Models 1, 3, and 5 represent the models of the effects of social class on WTP in 2010, while Models 2, 4, and 6 correspond to 2021. Models 1 and 2 include control variables and objective class variables. Models 3 and 4 add localized class variables (agricultural hukou, political affiliation, within-system employment, and housing property) on the basis of Models 1–2. Models 5 and 6 further incorporate subjective class variables (childhood, current, and future class identity) on the basis of Models 3–4.

As shown in Table 3, with respect to control variables, in 2010, residents in the eastern and central regions exhibited significantly lower WTP compared to those in the western region. By 2021, the regional differences had narrowed considerably (with regression coefficients and levels of statistical significance both declining), indirectly confirming the “welfare threshold effect” of regional ecological welfare performance. This means that where local governments invest heavily in urban environmental governance, residents' own WTP tends to be weaker. Meanwhile, age and marital status have almost never reached significant levels in influencing WTP. Gender was not significant in 2010 but became significant in

2021. Environmental concern consistently had a significant positive effect on WTP. These results suggest that between 2010 and 2021, the influence of region on WTP weakened, while men's WTP significantly increased.

Table 3 also shows the effects of traditional class variables on WTP. Across Models 1–6, years of education were consistently insignificant, indicating that Hypothesis H2a was not supported. In Models 1, 3, and 5, the regression coefficients of managers (responsible persons) and professional technical staff were 5.528 ($p < 0.05$), 5.271 ($p < 0.1$), and 4.616 ($p < 0.1$); and 5.566 ($p < 0.05$), 4.909 ($p < 0.1$), and 4.419 ($p < 0.1$), respectively—all statistically significant. However, in Models 2, 4, and 6, only in Model 2 did the coefficient for professional technical staff reach statistical significance (4.955, $p < 0.05$); all others were not significant. This indicates that from 2010 to 2021, managers and professional technical staff shifted from having significantly higher WTP than farmers and workers to showing no significant difference. In other words, the WTP advantage of higher occupational groups diminished over time. In contrast, other occupational categories such as office staff and service workers showed no significant results across all six models. Thus, in 2010, managers and professional technical staff had significantly higher WTP relative to other groups, supporting Hypothesis H2b. By 2021, however, this occupational advantage disappeared, and H2b was no longer supported.

Table 3. The Impact of Social Class on Willingness to Pay for Environmental Protection (OLS, Unstandardized Coefficients)

Variables	Model1	Model2	Model3	Model4	Model5	Model6
	(2010)	(2021)	(2010)	(2021)	(2010)	(2021)
(Constant)	27.129	28.402	25.830	30.297	16.339	19.428
Region ^a						
Eastern	-6.778***	-3.311*	-6.388***	-3.060*	-5.859***	-3.191*
Central	-4.961***	-2.518!	-4.822***	-2.522!	-4.429**	-2.607!

Variables	Model1	Model2	Model3	Model4	Model5	Model6
	(2010)	(2021)	(2010)	(2021)	(2010)	(2021)
Age	0.012	-0.085	0.024	-0.105!	0.090	-0.021
Male ^b	-0.564	2.166!	-0.947	1.786	-0.453	2.501*
Has Spouse ^c	-1.986	0.732	-2.508!	0.421	-2.273	0.516
Environmental Concern	8.010***	6.855***	7.986***	6.651***	7.718***	6.337***
TCV						
Years of Education	.010	.246	.037	.155	-.008	.114
Occupational Class ^d						
Managers/Admin	5.528*	1.700	5.271!	-.734	4.616!	-1.604
Professionals	5.566*	4.955*	4.909!	2.924	4.419!	2.633
Clerks/Office Staff	1.144	-1.512	0.480	-4.046	0.219	-4.268!
Service/Sales Workers	-3.052!	-0.488	-2.968!	-0.553	-2.919	-1.171
Annual Income (log)	-2.059**	-0.364	-2.202**	-0.443	-1.644*	-0.180
Annual Income (log) ²	0.187**	0.030	0.201**	0.039	0.141*	0.015
NCV						
Agricultural Hukou ^e			1.963	0.893	1.763	1.368
Political Affiliation ^f			3.095!	5.960**	3.425!	5.722**
State-Sector Employment ^g			1.035	3.018	0.969	3.088
Homeownership ^h			-0.532	-0.294	-0.900	-0.494
SCV						
Childhood Class Identity					0.353	0.825*
Present Class Identity					-0.006	-0.588
Future Class Identity					1.299**	1.536*
Adjusted R ²	0.123	0.084	0.124	0.090	0.134	0.109
F-statistic	23.435	10.772	18.285	9.040	17.165	9.438
DF	13	13	17	17	20	20
N	2085	1380	2085	1380	2085	1380

Note: !p<0.1, *p<0.05, **p<0.01, ***p<0.001.

It is worth noting that Table 3 also shows income effects. In Models 1, 3, and 5 (2010), income was significant and negative ($a_1 = -2.059$, $p<0.01$; $a_2 = -2.202$, $p<0.01$; $a_3 = -1.644$, $p<0.05$), while income squared was positive and significant ($a_1 = 0.187$, $p<0.01$; $a_2 = 0.201$, $p<0.01$; $a_3 = 0.141$, $p<0.05$). In Models 2, 4, and 6 (2021), income was not significant. This result suggests that in 2010, the impact of income on WTP followed a U-shaped pattern: as income initially increased, WTP decreased, but at higher income levels, WTP significantly increased. Therefore, Hypothesis H2c was partially supported in 2010, but not supported in 2021.

^a Reference: Western region. ^b Reference: Female. ^c Reference: No spouse. ^d Reference: Workers and farmers. ^e Reference: Non-agricultural hukou. ^f Reference: Not a member of the ruling political organization. ^g Reference: Non-state-sector employment. ^h Reference: No homeownership.

4.3 The Evolving Impact of Native Social

Class

Table 3 also shows the effects of localized class variables on willingness to pay for environmental protection (WTP). Among the four localized class variables, only Political affiliation reached statistical significance: in 2010 the coefficient was 3.425 ($p<0.1$), and in 2021 it was 5.722 ($p<0.001$). This result indicates that hukou type, work-unit type, and housing property rights had no significant effects on WTP. In contrast, Political affiliation was significant in both 2010 and 2021, and its effect showed a clear strengthening trend over time. Therefore, in both 2010 and 2021, Hypothesis H3b was supported, while Hypotheses H3a, H3c, and H3d were not supported.

4.4 The Evolving Impact of Subjective Social Class

Table 3 presents the effects of subjective class variables on willingness to pay for environmental protection (WTP). Current class identity did not reach statistical significance in

either Model 5 or Model 6. By contrast, future class identity was statistically significant in both Model 5 (1.299, $p < 0.01$) and Model 6 (1.536, $p < 0.05$), with the coefficient in Model 6 being stronger than in Model 5. This indicates that the effect of future class identity on WTP has consistently been significant and has shown an increasing trend.

Meanwhile, childhood class identity in Model 6 had a coefficient of 0.825 ($p < 0.05$), suggesting that childhood class identity had a significant impact on WTP in 2021. Overall, future class identity exerted a significant and gradually strengthening effect on WTP in both 2010 and 2021.

Therefore, Hypothesis H4 was partially supported in both 2010 and 2021: Hypothesis H4a (current class identity) was not supported; Hypothesis H4b (childhood class identity) was supported in 2021; and Hypothesis H4c (future class identity) was supported in both 2010 and 2021.

5. Discussion

Based on data from the Chinese General Social Survey (CGSS) in 2010 and 2021, this study analyzes the effects and temporal changes of traditional class variables, localized class variables, and subjective class variables on willingness to pay for environmental protection (WTP). The results reveal that not all advantaged groups across different dimensions demonstrate higher WTP than disadvantaged groups. Over time, overall WTP has increased, but the influence of traditional class factors has weakened, the effect of Political affiliation has become more pronounced, and the impacts of childhood, current, and future class identity on WTP show clear differences.

5.1 An Overall Upward Trend in Public WTP

This study reveals that the Chinese public's WTP for environmental protection was significantly higher in 2021 than in 2010. This increase was primarily driven by a greater willingness to pay higher prices and taxes, whereas the willingness to accept a lower standard of living declined. This finding suggests a broadly positive shift in environmental attitudes. As proposed by post-materialist theory, economic development is a primary driver of this trend; rising per capita disposable income has enabled more Chinese citizens to support environmental protection financially. However, this shift in consciousness

reflects greater support for "technological solutions" to environmental problems rather than a willingness to sacrifice personal quality of life, which aligns with the prevailing social value of pursuing a "better life."

5.2 Traditional Class: Weakening Effects and an Emerging Consensus

While economic growth has boosted WTP, it has also fueled tendencies toward materialism, consumerism, and individualism, which can prioritize material enjoyment over environmental goals and potentially undermine pro-environmental intentions. In 2010, individuals in higher-status occupations demonstrated a stronger WTP, a finding consistent with previous research [3]. By 2021, however, the influence of traditional class variables had become almost entirely non-significant, a change that aligns with other recent studies [16].

This transformation suggests that in 2010, environmental consciousness in China was still heavily stratified by occupational background, with higher-status groups possessing more environmental knowledge and resources to support green initiatives. Furthermore, the U-shaped effect of income in 2010 is telling. During that period of rapid economic growth and significant income disparity, environmentalism was often perceived as a "philanthropic activity for the wealthy." High-income groups were thus more inclined to pay, while low-income groups were constrained by their limited financial capacity. The lowest WTP among the middle-income group may reflect their prioritization of improving living standards and upgrading consumption, viewing environmental contributions as a deferrable expense.

By 2021, the diminishing influence of traditional class factors indicates that environmentalism has evolved from a niche concern into a cross-cutting social value. This shift has been driven by widespread environmental campaigns by the government and non-profit organizations, as well as the rapid proliferation of information technology. The internet, social media, and online educational platforms have dramatically accelerated the dissemination of environmental knowledge, fostering a broader social consensus that transcends class boundaries.

5.3 Native Class: Value Alignment and the

Responsibility of Political Affiliation

This study finds that hukou type and state-sector employment are not significant predictors of WTP, which corroborates previous research. For example, some studies have noted that rapid urbanization and rural revitalization policies have narrowed the gap in environmental awareness between urban and rural residents, making hukou a less relevant distinguishing factor. Early research also found no significant difference in WTP between state- and non-state-sector employees in urban areas [9].

The most striking finding in this domain is that membership in the ruling political organization was a significant predictor in both 2010 and 2021, with its influence strengthening over the decade. This can be attributed to the identity-based expectation for members to act as pioneers and role models, as well as a potentially higher sense of social responsibility. In China, individuals with this affiliation are often expected to play an active role in social and economic development, and contributing to environmental protection can be seen as part of this duty. They are more likely to internalize and act upon the pro-environmental policies advocated by the state. The strengthening of this effect also indirectly reflects the increased political salience of environmental protection in national policy after 2010. This policy orientation is communicated to individual members through political education and activities, reinforcing identity-based environmental responsibilities.

5.4 Subjective Class: Future Orientation and Aspirational Environmentalism

The differential impact of subjective class identity across different time frames is the most important finding of this study. First, childhood class identity, while insignificant in 2010, became a significant predictor of WTP in 2021. Childhood identity reflects an individual's early socialization, a period when core values become internalized. Those who perceive their childhood class as high may continue to be guided by the values associated with that status, and pro-environmental behavior is often a symbolic marker of a higher social class.

Second, future class identity was a strong and strengthening predictor in both 2010 and 2021. This indicates that for many Chinese citizens, paying for environmental protection is viewed as an investment in a better future. A higher

perceived future class reflects aspirations for upward mobility and a long-term orientation, which can motivate pro-social actions today. In contrast, a high present class identity alone does not translate into higher WTP. In the contemporary Chinese context, even those who feel they are in a high social position face significant social anxieties stemming from economic uncertainty, social competition, and life pressures. These immediate concerns can inhibit behaviors like green consumption that require present-day sacrifice for future collective gain.

6. Conclusion

This study provides a dynamic analysis of the social determinants of WTP for environmental protection in China over a transformative decade. Our findings reveal a clear and significant shift in the factors that motivate pro-environmental financial behavior. In 2010, WTP was primarily shaped by traditional class markers, such as occupation and a U-shaped income effect, alongside an emerging influence from future-oriented class perceptions and political affiliation.

By 2021, a profound transformation had occurred. The predictive power of traditional class indicators had largely faded, suggesting that environmental concern in China has evolved from a class-stratified issue into a more widely accepted social consensus. In this new context, the primary determinants of a higher WTP have shifted. The most influential factors are now a strong sense of future class identity, a high-status childhood identity, and, most notably, membership in the country's ruling political organization.

This evolution indicates that the willingness to pay for environmental protection in contemporary China is becoming less about one's current economic standing and more about one's political identity, long-term personal aspirations, and internalized social values formed early in life. In essence, the motivation has transitioned from a behavior largely dictated by objective resources to one more deeply rooted in identity and future-oriented values.

Naturally, this study has limitations. The conclusions are drawn from two specific cross-sections in 2010 and 2021. While they reveal a clear pattern of change, further empirical research with more frequent data points would be beneficial to fully validate these evolving

dynamics and to continue tracking the transformation of environmental consciousness in China.

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