

are directly related to environmental degradation, and most of them stem from the imbalance between human social development and ecological governance [4, 5]. Topfer (1998), the former Executive Director of the UNEP, established that “mankind is at the crossroads of development presently, and the future of mankind is in its own hands. The choices of today will determine what kind of environment current and future generations will live in”. He emphasized that without environmental protection, it is impossible for human society to achieve its ideal development goals. This requires people to change their daily behaviors and reduce the adverse effects of their behaviors and activities on the environment [6]. However, from what perspective can people’s PEBs be changed to a greater extent, which is the basis of environmental governance at this stage?

In the general explanation framework of PEBs, scholars often regard PEBs as goal-oriented behaviors and analyze the formation mechanism and psychological factors of PEBs from the perspective of individual citizens [7, 8]. Some researchers have established that the current literature mainly studies the PEBs of individual citizens from the internal and external mechanisms of individual environments (cognitive factors and population factors) or from the separation and integration of society and nature (social and cultural factors). For example, the early planned behavior theory [9] and other theoretical frameworks all try to explain the formation mechanism of PEBs [10]. However, rational behavior theory and planned behavior theory pay excessive attention to individual cognitive factors such as behavior attitude and subjective norms, overlooking the social situation of behavior formation. Although the theory of norm activation [11] introduces responsibility as a variable with obvious social attributes, it cannot influence PEBs by promoting the formation of group social norms [12]. These two types of research paths make it difficult to obtain a reasonable explanation from individuals, society, and nature. Currently, there is a lack of detailed explanation of the social-individual path in PEBs, and the influence of social subjective cognition on citizens’ PEBs is overlooked [13].

Compared with previous studies on citizens’ PEBs, we attempt to explore the relationship between social subjective cognition (SCC, PSS), individual ERP [14], and citizens’ PEBs from the perspective of social situations and integrate social and cultural factors [15]. This study primarily aims to consider the following questions: (1) What factors of social subjective cognition have a significant impact on citizens’ ERP? (2) What is the influence mechanism of social subjective cognition on citizens’ PEBs? (3) Does media use expand citizens’ perceptions of environmental risks?

This study uses the national data set of CGSS2013 for empirical analysis. SEM is used to estimate the impact of PSS and SCC on citizens’ PEBs [16]. Using the bootstrap method, this paper discusses the mediating effect of ERP and tests the “expanding effect” of MU on ERP to PEBs.

The marginal contributions of this study are as follows: First, PSS and SCC are considered the main explanatory variables, enriching the multi-dimensional perspective research on the influencing factors of citizens’ PEBs. It discusses the implicit relationship among the influencing factors by using SEM. Secondly, on the basis of theory and experience, different from the previous pattern of dividing the nature of PEBs between public domain and private domain, it breaks the opposition between citizens’ PEBs in the public domain and the private domain [17] and finds a common explanation among individuals, society, and nature, which is of great practical significance to the construction of the environmental governance pattern of “co-construction, sharing, and governance” (the report of the 19th National Congress of the Communist Party of China). Thirdly, the results of this study can provide reference suggestions for deepening the precise formulation of citizens’ PEB policies and establishing the participation of the whole people in environmental governance.

The rest of this article is as follows: Section 2 describes the influencing factors and research assumptions. Section 3 introduces the data sources and research methods. Section 4 introduces the results of this empirical study, including the model-fitting test, structural path analysis, mediating effect analysis, and moderating effect test. Section 5 discusses the research results of this paper and puts forward relevant suggestions. Finally, it reveals the conclusions and limitations of this paper.

Literature Review and Hypotheses

PEBs and Their Related Factors

Scholars try to define the concept of PEBs and clarify the correlation among various influencing factors. However, due to the diversity of environmental problems and the multidimensional nature of environmental behavior [18], it is difficult to define PEBs. PEBs mainly include environmentally responsive behaviors [19], ecological behaviors [20], conservation behaviors [21], and ecological consumer behavior [22]. According to this study, PEBs can be defined as any behavior that benefits the environment or minimizes damage to the environment. Considering influencing factors, since the 1980s, environmental psychology scholars have identified two main sets of factors to predict PEBs: interpersonal factors and contextual factors [23]. Interpersonal factors include attitudes, norms, motivations, and subjective well-being [24]. The latter includes physical infrastructure, capability, technical facilities, and the availability of products [25].

Public Service Satisfaction (PSS)

PSS is citizens’ subjective judgment on the supply

Table 3. Test statistics for the hypothesized model.

Fit indices	Definition	Criteria	Results
CFI	Comparative fit index	>0.9 good fit	0.997
TLI	Tucker-Lewis index	>0.9 good fit	0.984
χ^2/df	Chi-square	<3 good fit	2.606
RMSEA	Root mean squared error of approximation	<0.08 good fit	0.049
SRMR	Standardized root mean squared residual	<0.09 good fit	0.018

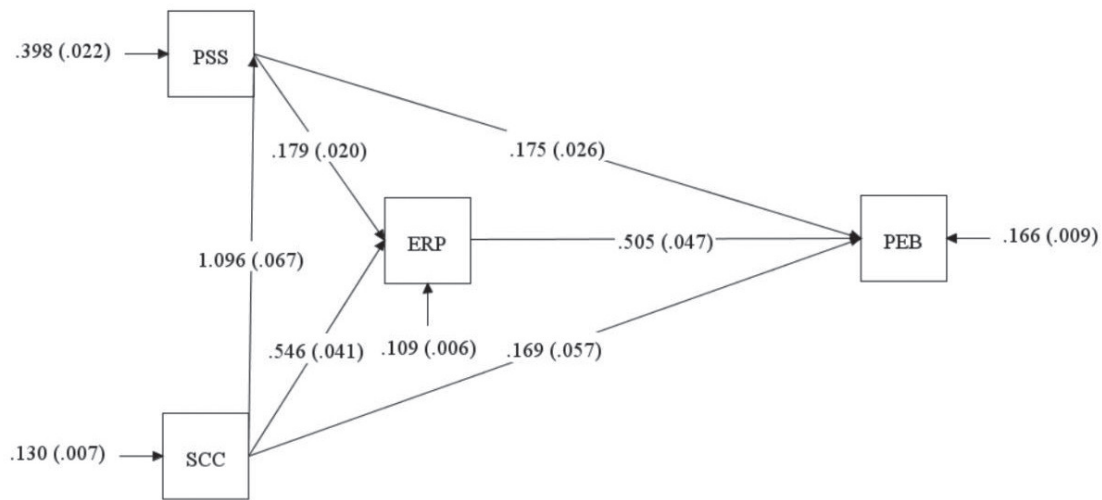


Fig. 2. The influence paths of pro-environment behaviors.

The Mediating Effect of ERP

According to Fig. 2, ERP has mediating effects on PSS, SCC, and PEBs. Therefore, this section will analyze the intermediary role of ERP. Compared with the Sobel test method, the Bootstrap method is more powerful in testing multiple mediators and can be used for non-normal parameter estimation. It is the most recommended mediation effect test method in academic circles at present. Table 4 displays the validation results in both bias-corrected and percentile modes. The results show that ERP plays an intermediary role in PSS and PEBs (indirect effect = 0.084; 95% CI [0.098, 0.143],

[0.091, 0.138]), and ERP also plays an intermediary role in SCC and PEBs (indirect effect = 0.039; 95% CI [-0.150,-0.009], [-0.148,-0.035]). Simultaneously, the results show that the direct effect of the model does not include the value 0 in the range of 95% CI; hence, ERP plays a partial intermediary role in PSS, SCC, and PEBs, and H4A and H4B hold true.

The Moderating Effect of MU

From the results of Model 1 of Table 5, it can be observed that MU has a significant positive effect on PEBs ($\beta = 0.185$, $P < 0.01$). It can also be observed from

Table 4. The mediation effect test of environmental risk perception.

Mediation path	Types of mediating effects	Estimate	Product of coef.		Bias-corrected		Percentile	
			SE	Z	Lower	Upper	Lower	Upper
PSS—ERP—PEB	Indirect effect	0.084	0.012	9.956	0.098	0.143	0.091	0.138
	Direct effect	0.175	0.016	9.235	0.081	0.118	0.078	0.116
	Total effect	0.259	0.006	8.326	0.072	0.102	0.059	0.094
SCC—ERP—PEB	Indirect effect	0.039	0.032	6.365	-0.150	-0.009	-0.148	-0.035
	Direct effect	0.169	0.014	5.329	0.015	1.039	0.025	0.104
	Total effect	0.208	0.038	5.986	0.030	1.118	0.049	1.137

environmental risks are activated from the potential state and become the signal to strengthen or weaken the environmental risk information received by individuals [54, 55]. When the amount of information about an environmental risk event is larger, it indicates that the new risks are becoming more serious. Simultaneously, in the absence of direct personal ERP experience, people generally identify risks through mass media. Therefore, the mass media plays an important role in regulation. Environmental risks are often dealt with and transmitted by mass media (newspapers, networks, communications, etc.), and finally, subjective risks are constantly spread, diffused, and enlarged in the form of information.

Suggestions

The above research conclusions provide relevant policy enlightenment, and the possible policy suggestions are as follows: First, with the help of technical tools, we should change from “manual” guidance to “scenario” environmental practice. Simulating PEBs through the visual process, live video, demonstration animation, and other means, and promoting scene-based environmental public services in communities and public places can facilitate various groups to acquire the ability of PEBs.

Secondly, the reality of “re-delocalization” promotes environmental cooperative governance between citizens and the government. The “re-delocalization” of post-industrial society makes the public sphere and private sphere gradually merge. Therefore, considering the reality of domain integration, non-governmental organizations, and many socially autonomous forces participate in the process of social environmental governance, thus breaking the boundary between public domain and private domain, changing the static governance structure of separation between the governor and the governed, and launching environmental cooperative governance based on voluntary consciousness.

Finally, the mutually beneficial and symbiotic development between humans and the environment is considered. This mutually beneficial symbiotic relationship not only refers to the common existence between citizens and the environment but also refers to the common development of citizens and the environment, i.e., the two sides grow and evolve on the premise and condition of each other. The environment provides the necessary materials and resources for the survival and development of citizens. Conversely, citizens also inject new vitality into the sustainable development and benign construction of the environment and add richer and more diverse environmental elements to the environment as producers. While the environment shapes human beings, people are also transforming the environment, and they depend on each other and live together.

Conclusions and Limitations

Conclusions

Based on the data from CGSS2013, this study analyzes the influence mechanism of social subjective cognition on citizens’ pro-environmental behavior by using structural equation modeling and intermediary and moderating effect tests. We can draw the following main conclusions: First, SCC and PSS have a significant positive impact on citizens’ PEBs; i.e., the more optimistic the citizens’ SCC and higher the PSS, the more frequent the citizens’ PEBs. Secondly, from the perspective of impact mechanisms, ERP plays an important intermediary role in the impact of SCC and PSS on citizens’ PEBs. Third, ERP is significantly affected by the risk amplification effect of MU. Fourth, it integrates and unifies personal perception, social cognition, and PEBs under the same theoretical framework and better explores the influence mechanisms of citizens’ PEBs.

Limitations

However, some limits should be considered. First, we consider cross-sectional data, which may have endogenous problems and are common problems in empirical research based on single survey data. Therefore, the scale used to measure variables in this study was not developed for the purpose of this study. Although the internal consistency, reliability, and structural validity of each questionnaire have been tested.

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Conflict of Interest

The authors declare no conflict of interest.

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