

Original Research

Research on Types and Driving Mechanism of Participation Behaviors of College Students in Education of Ecological Literacy under the Background of Environment Digital Governance in China

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Abstract

The public ecological literacy and environmental protection behaviors in China still have the intention-behavior gap and exist in the Giddens Paradox. Based on the perspective of public participation in community education, the behaviors related to ecological literacy and environmental protection of college students were classified into three categories: Egoistic, Altruistic, and Ecological. Through investigation, it was found that there are type differences, group differences, and regional differences among them. Based on Norm-Activity-Theory, Theory of Planned Behavior, Value-Belief-Norm Theory, and Attitude-Behavior-Context Theory, an empirical analysis is made on the driving factors of participation behaviors. Based on this, some countermeasures and suggestions are put forward for future development.

Keywords: participation behaviors, ecological literacy, typological research, driving mechanism

Introduction

The concept of environmental literacy was put forward for the first time in 1968, which includes sensitivity to the external environment, the ability to solve environmental problems, sustainability and initiative in paying attention to environmental problems, and the action force for protecting the environment [1]. Afterward, some scholars noticed the internal relationship between the ecological environment and education, creatively put forward the concept of "Ecological Literacy", and thought that Ecological Literacy was an index to measure whether people had

a certain understanding of the relevant knowledge and processes of the ecosystem and whether they had the behavior and ability to improve ecological environment problems [2]. Although the concept of ecological literacy originated from environmental literacy, ecological literacy emphasizes the benign interaction and harmonious relationship between humans and the natural environment. Therefore, the concept of "Ecological Literacy" used in this study is not only in line with the development characteristics of the times when humans and nature live in harmony, but also conducive to the sustainable development of humans and society. Citizens' ecological civilization literacy takes ecological knowledge as the cognitive basis, ecological ethics as the value guide, ecological emotion as the emotional link, and ecological behavior as the ultimate embodiment, forming the endogenous power of "unity

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of knowledge and action” [3]. Previous studies have agreed that the improvement of ecological literacy cannot be separated from ecological environment education. Ecological environment education aims to enable citizens to use natural resources correctly to improve the quality of human life and make them realize that there is an inseparable, equal, and harmonious relationship between people and the ecological environment, so as to enhance citizens’ ecological literacy, encourage the public to implement environmental protection behaviors and realize the benign interaction between human and the ecological environment [4].

Generally, academic circles believe that Ecological Literacy includes ecological knowledge, ecological consciousness, emotion, attitude, skills, and ecological behaviors [5-7]. In order to measure public environmental literacy, the Chinese Civic Environmental Behavior Survey 2022, published by the Ministry of Ecology and Environment of China in 2023, investigated the basic situation of public ecological literacy from the aspects of ecological knowledge, attention to the ecological environment, and ecological environmental protection behaviors. According to the survey, the Chinese public generally has a strong willingness to behave in the environment, while there are differences in practical actions in different fields. It has the characteristics of high awareness and low practice, and environmental cognition and environmental behavior are inconsistent. There is a Giddens Paradox in the field of ecological environmental protection. Under the background of digital environment governance, the cultivation of public ecological literacy cannot be separated from the development of community education, and the community is the “last mile” of ecological education. In the future, the community will pay attention to people as its core, pursue modernization of form, and realize high-quality and sustainable development. Therefore, community education must be humanistic, digital, and ecological, and more people need to participate in learning and practicing the concept of ecological civilization education [8]. Community education of ecological literacy is an educational activity that takes the community as the category and all the members of the community as objects, aiming at improving the ecological literacy and environmental quality of the community members as a whole. In China, participants in community education of ecological literacy are very diversified, including government departments, community residents, grass-roots autonomous organizations, social organizations, environmental protection enterprises, and so on. There are various types of public participation behaviors, including garbage sorting, green consumption, participating in environmental protection volunteer activities, reporting pollution behaviors, etc. These participation behaviors go from shallow to deep, from self-interest to altruism, from private domain to public domain, and from governance to prevention, which conform to the characteristics of stepped participation described by

Sherry Arnstein [9], forming a “differential pattern” of ecological environment literacy and pro-environmental behavior in the community. In the community of “embedded governance”, there is system embedding, technology embedding, knowledge embedding, etc. Environmental digital governance lowers the threshold of public participation. In community environmental governance, various subjects are intertwined, and different groups and different types of participation behaviors have different characteristics, which have different impacts on the ecological environment [10]. Among them, college students are the most important participants. In this context, a large sample of survey data from college students will be used to explore its internal influence mechanism and driving mechanism in this paper.

Literature Review and Research Hypothesis

The most direct purpose, the most important content, and the most effective function of environmental education and ecological literacy in the community is to improve people’s cognitive level of the ecological environment and advocate for people to carry out green environmental protection actions. Theory of Reasoned Action (TRA), Social Cognitive Theory, and Theory of Planned Behavior (TPB) all believe that ecological recognition and environmental awareness, emotions and attitudes, subjective norms, and perceived behavior control have a significant positive impact on local residents’ willingness to participate and environmental responsibility behaviors [11-17]. Subjective norms include social norms and individual norms. Norm-Activity-Theory (NAT) holds that awareness of conflict, responsibility attribution, and subjective norms will all have an impact on environmental behaviors [18]. Some scholars have built an integrated framework of TPB and NAT, adding variables such as behavior attitude, subjective norms, and perceived behavior control (PBC) on the basis of environmental cognition in order to better interpret people’s intentions or behaviors toward ecological environment protection. The results showed that variables such as ecological value, emotions and attributes, subjective norms, and PBC will affect the public’s ecological literacy and environmental behavior [19].

Therefore, this paper proposes the following research hypotheses:

H1: Cognition and awareness have a positive effect on emotions and attitudes.

H2: Cognition and awareness have a positive effect on subjective norms.

H3: Cognition and awareness have a positive effect on perceived behavioral control.

H4: Cognition and awareness have a positive effect on behavioral intentions.

H5: Emotions and attitudes have a positive effect on behavioral intentions.

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