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Differentiated Impact of Politics- and Science-Oriented Education on Pro-Environmental Behavior: A Case Study of Chinese University Students

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Abstract: The purpose of this study is to understand the differentiated impact of politics- and science-oriented education on pro-environmental behavior among university students. A questionnaire was designed and sent to more than 14,000 university students from 152 universities in China using the snowball sampling method. In the questionnaire, the environmental knowledge was divided innovatively into two parts: Science-oriented knowledge spread by traditional environmental education and politics-oriented knowledge spread through political education. The structural equation model was used to understand the conduction path of pro-environmental knowledge, attitude, and behavior. It shows that politics-oriented knowledge has a quicker and stronger effect on improving behavior than science-oriented knowledge. Moreover, there is a significant positive correlation between science- and politics-oriented knowledge. However, the attitude is positively influenced by science-oriented knowledge, instead of politics-oriented knowledge. It suggests that traditional environmental education and political education should be integrated to promote the pro-environmental behavior of university students indirectly and directly, which may provide an opportunity for pro-environmental political education in other countries. The study contributes important theoretical and practical implications for environmental education and sustainable development.

Keywords: environmental politics; education; science-oriented knowledge; politics-oriented knowledge; structural equation model

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Citation: Wang, R.; Jia, T.; Qi, R.; Cheng, J.; Zhang, K.; Wang, E.; Wang, X. Differentiated Impact of Politics- and Science-Oriented Education on Pro-Environmental Behavior: A Case Study of Chinese University Students. *Sustainability* **2021**, *13*, 616. https://doi.org/10.3390/su13020616

Received: 8 December 2020
Accepted: 5 January 2021
Published: 11 January 2021

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1. Introduction

With the global ecological and environmental crisis intensifying, more countries have formulated systematic environmental protection strategies and policies, designed environmental education programs, and encouraged the public's pro-environmental behavior [1]. The motive behind the promotion of environmental protection by the states and political parties is both scientific and political. Many political parties have added "green policy" to their programs and guided the sustainable development of society through political and ideological propaganda. However, previous studies have paid little attention to the mechanism of politics, which has played a significant role in environmental protection and needs to play an even greater role.

In recent years, the Chinese ecological environment has continued to deteriorate, which has attracted the attention of the Communist Party of China and raised the degree of the environmental concerns from the departmental level to the national level. As a result, the concept of ecological civilization has been proposed, and large-scale ideological and political education has been carried out. This type of education has taken many forms, including extensive social education through slogans and theoretical education for university students through political courses. Politics-oriented environmental education brings new knowledge on the national environmental strategy to university students and combined

with the scientific knowledge brought by the traditional science-oriented education. It has the potential to change the public's attitude and behavior. Is there a difference in the influence of these two types of education? How does politics-oriented education play a role in shaping public's pro-environmental behavior? This study, taking Chinese university students as an example, investigates the relationship between environmental politics education and pro-environmental behavior through a large-scale questionnaire survey.

2. Literature Review

The pro-environmental behavior is influenced by many factors [2,3], such as education [4–6], pro-social conditions [7,8], culture [9], and policy [10].

Many scholars have a positive attitude to the relationship of pro-environmental knowledge, attitude, and behavior. Fortner and Teates [11] showed a significant correlation between knowledge and attitude for primary and middle school students regarding the marine environment. Arcury [12] found a positive correlation between the environmental knowledge of North American consumers and their attitude and behavior. Polonsky et al. [13] found that environmental knowledge and related attitude act as catalysts for environmentally friendly purchasing behavior. Bang et al. [14] identified the willingness of consumers to spend more on renewable energy and concluded that there was a positive relationship between knowledge and attitude. Fujii [15] demonstrated that environmental knowledge has a significant positive effect on the reduction of waste, and the attitude to the economy has a significant positive effect on the reduction of energy consumption, particularly that of electrical resources.

However, some scholars have denied these correlations. Hopper and Nielsen [16] took garbage collection as an example and showed that environmental attitude had nothing to do with behavior and that people with a positive environmental attitude did not take the initiative to recycle. Tanner and Wölfing Kast [17] argued that environmental knowledge targeting action can influence environmental behavior, but the knowledge of facts cannot influence the behavior. Sweeney et al. [18] concluded that an energy-saving attitude does not lead to energy-saving behavior. Paço and Lavrador [19] suggested that there is no difference between the environmental attitude and behavior of students with different levels of environmental knowledge and that environmental knowledge has little effect on their attitude and behavior. Liu et al. [20] argued that environmental knowledge is an important distal variable but does not have a significant direct effect on environmentally friendly behavior.

Previous studies have paid attention to the relationship between pro-environmental knowledge, attitude, and behavior and to the influencing factors of pro-environmental behavior. However, few scholars have considered and distinguished the important role of politics-oriented education in pro-environmental behavior. The main contribution of this paper is to investigate the university students' environmental knowledge in two groups, science-oriented knowledge (SOK) spread by traditional environmental education and politics-oriented knowledge (POK) spread through political education and compare their diverse effects on behavior. The findings will provide a basis for pro-environmental political education in other countries.

3. Theoretical Basis and Research Methodology

3.1. China's Ecological Environment Protection Strategy, Education, and Knowledge

Since the United Nations Conference on the Human Environment in 1972, China has implemented several measures on ecological and environmental protection and management, which can be divided into two stages. The first stage involves the environmental protection strategy led by ministries from 1972 to 2012. The second stage involves the ecological civilization strategy led by the Central Committee of the Communist Party of China from 2012 to the present day. Ecological environmental protection has been raised to an unprecedented level and included in the state constitution and also in the constitution of the Communist Party of China.

To implement the ecological environment protection strategy, China's environmental education was divided into two groups: Science- and politics-oriented environmental education (Figure 1). The former has been continuing since 1972 and mainly includes elementary, middle, and high school basic education on environmental pollution, wetland functions, garbage classification, and other basic environmental topics. The latter has been intensified since 2012 through vigorously promoted strategies, such as ecological civilization, "five in one" [1], and "beautiful China" [2] via central documents, provincial government documents, and various media channels. The former is highly valued in most countries of the world, and its influence on pro-environmental behavior has been previously studied. However, there is a lack of research on the influencing factors of the latter on pro-environmental behavior.

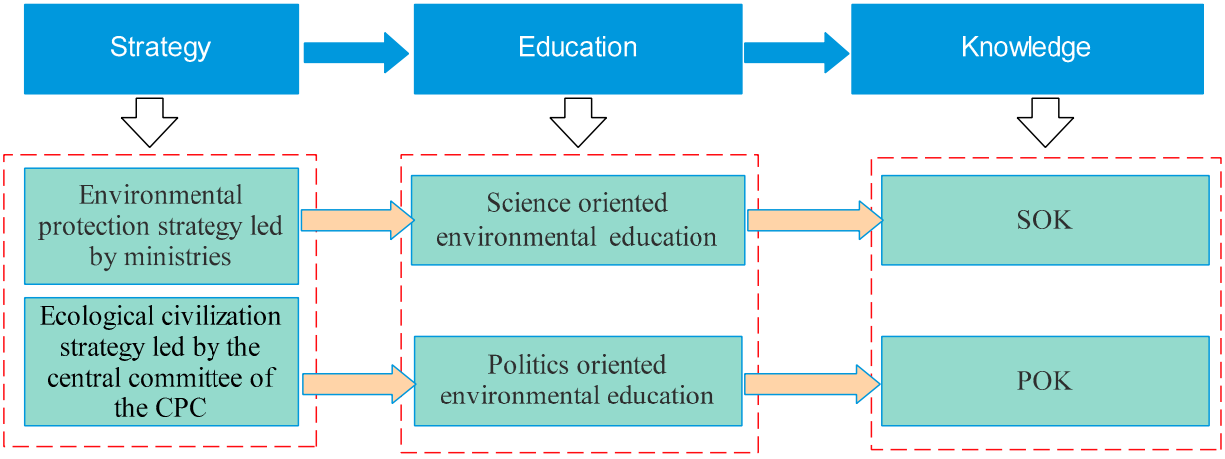


Figure 1. China's ecological environment protection strategy, education, and knowledge frame.

3.2. KAP Theory

Knowledge-Attitude-Practice (KAP) is a behavioral intervention theory and one of the most commonly used models for explaining how personal knowledge and beliefs affect healthy behavior. It was first proposed by the British scientist John Coster in the 1960s. The theory divides the change in human practice into three continuous processes: Acquiring knowledge, producing attitude, and forming practice [21]. Among them, "knowledge" is the understanding of relevant information, "attitude" is correct belief and positive attitude, and "practice" is behavior.

The model has been used in research in the fields of medicine and public health to explain how personal knowledge and attitude change health practice [22–24]. In this study, the KAP model is introduced into the field of sociology of resources and environment to study its impact on pro-environmental behavior based on diverse education.

3.3. Research Assumptions

Hypothesis (H1). *University students' pro-environmental attitude has a positive effect on their behavior.*

Behavior is the external expression of attitude, and attitude has positive influence on behavior [5,25]. Attitude is a person's evaluation of an object. It expresses a psychological tendency to like or dislike something, or a specific emotional tendency towards something [26], as a significant predictor for interpreting and promoting behavioral intentions [27]. Environmental attitude can promote pro-environmental behavior [3,28,29]. For example, consumers with a positive attitude are more likely to buy "green" and energy-efficient products, they do not find it inconvenient to buy green products [30,31]. Additionally, the environmental attitude of visitors predicts the timing of their environmental behavior [32,33]. Therefore, H1 proposes that the stronger the pro-environmental

attitude of university students, the more likely it is that they will transfer that attitude into pro-environmental behavior in their daily life.

Hypothesis (H2). *Pro-environmental knowledge has a positive effect on university students' attitude.*

University students' pro-environmental knowledge can foster a positive environmental attitude [34–37]. An environmental attitude changes positively as knowledge increases [38,39]. A pro-environmental attitude is more positive for groups with more experience and knowledge about natural resources [40]. For example, aquarium visits and publications related to marine protected areas can greatly improve the marine environmental protection attitude of visitors by increasing their knowledge [41]. Knowing more about the environment plays an important role in building attitude towards energy conservation and emissions reduction [42]. Therefore, H2 proposes that the more relevant knowledge university students master, the stronger attitude they will have.

Hypothesis (H3). *University students' pro-environmental knowledge has a positive effect on their behavior.*

If one is ignorant of environmental issues, one cannot consciously care about the environment or act in an environmentally friendly manner [43]. Environmental knowledge is one of the most powerful predictors of pro-environmental behavior in classical meta-analysis [44], which can promote pro-environmental behavior [9,45]. Therefore, H3 proposes that the more relevant knowledge university students have, the more action they will take to protect the ecological environment.

Hypothesis (H4). *SOK and POK reinforce each other.*

SOK and POK, as two aspects of promoting pro-environmental knowledge, influence each other. Generally, employees that have a deep understanding of the rules and regulations are more inclined to learn the basic theoretical knowledge, and those who have a good grasp of the relevant theoretical knowledge have a deeper understanding of the rules and regulations. Similarly, university students that have a deeper understanding of political knowledge are more likely to learn and supplement SOK, while those who have a richer SOK have a clearer understanding of POK. Therefore, H4 proposes that SOK and POK promote each other.

Given the above proposed hypotheses, a research framework is developed for this study as shown in Figure 2 below.

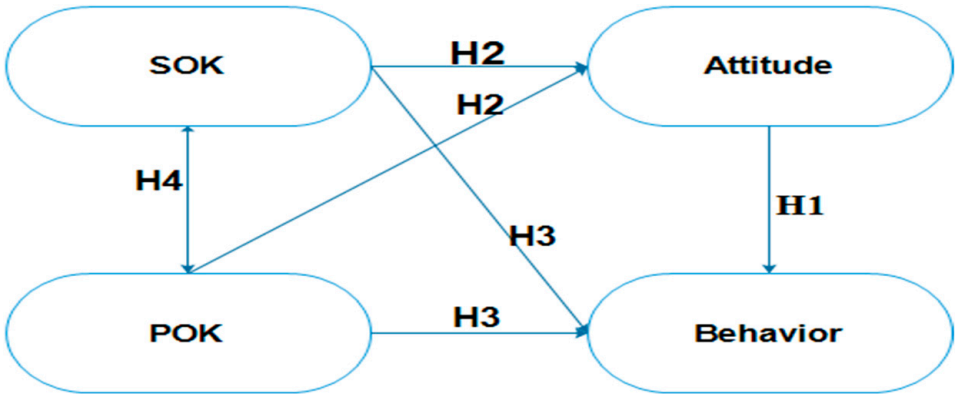


Figure 2. Research hypotheses.

3.4. Questionnaire

Based on KAP theory and the proposed research hypothesis, a questionnaire was prepared from SOK, POK, attitude and behavior (Figure 3) to carry out the evaluation index and questionnaire design.

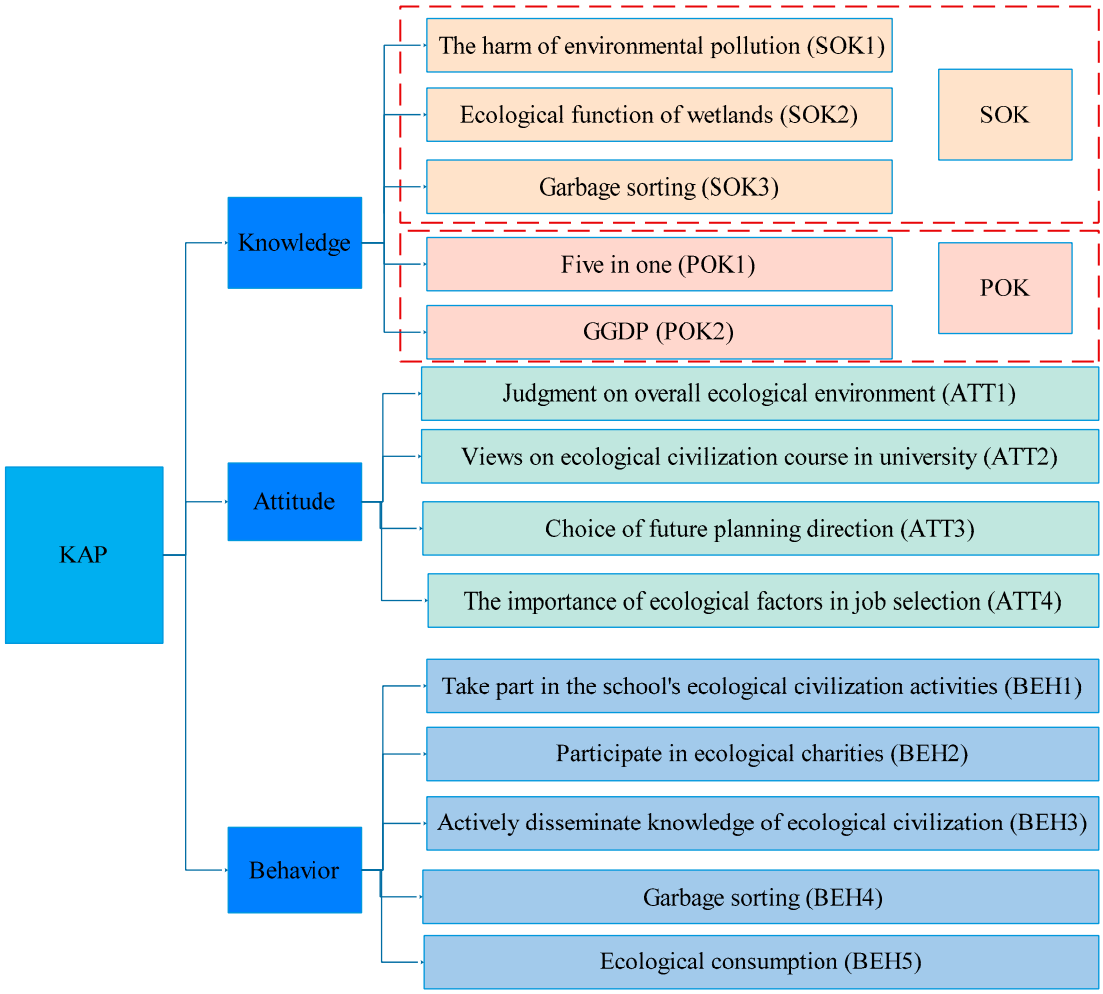


Figure 3. Evaluation indicators and questionnaire design.

Questionnaire distribution and data collection. The questionnaire was issued in December 2015 and completed in March 2016 by the Center of Ecological Civilization (CEC) of China University of Geosciences. The survey was conducted using the snowball sampling method. First, we recruited university students from different provinces. Then, they recruited their former classmates who study in different regions and universities to become the next level of volunteers, and this process was repeated. To ensure the randomness of the sample distribution as much as possible, we set the following rules: Each volunteer cannot recruit more than five people and these volunteers cannot attend university in the same province. We finally had 250 volunteers who distributed the electronic questionnaire through their social network (e.g., Tencent and WeChat).

The survey participants were from approximately 150 universities in 30 provinces except for Tibet, Hong Kong, Macao, and Taiwan. Among the 14,097 questionnaires that were completed and returned, 693 were invalid and thus excluded based on the data verification requirements, thus, 95.08% of the returned questionnaires (13,404 questionnaires) were valid and used in the model.

3.5. Structural Equation Model

Structural equation model (SEM) is a general statistical modeling technique, which is widely used in many fields, such as psychology, sociology, and economics. SEM is a composite of econometrics, social econometrics, and psychometrics and often used to analyze data with multiple latent and observational variables, as well as examine the effect of a single index on the entire system and the relationship between each index. It is a multivariate statistical technique combining path analysis and factor analysis and has the advantage of being global and systematic, unlike the general regression analysis. Therefore, it can substitute the methods of multiple regression, path analysis, factor analysis, and covariance analysis. This study used SEM as the main analysis tool in the AMOS22.0 statistical software.

4. Research Results and Scientific Discussion

4.1. Reliability and Validity Test

Reliability analysis was done. Table 1 shows that the Cronbach's α values of SOK, POK, attitude and behavior vary between 0.6 and 0.7. The Cronbach's α value of the total scale is 0.792, which is greater than 0.7 and close to 0.8, indicating that the questionnaire showed good reliability.

Table 1. Reliability test of the questionnaire.

Scale Type	Cronbach's α	Number of Terms
SOK	0.656	3
POK	0.653	2
Attitude	0.651	5
Behavior	0.616	4
Total scale	0.792	14

The validity analysis was passed. Table 2 shows that the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy is greater than 0.8, and that the P-value of the Bartlett sphericity test is 0.000 at the 1% significance level. These results indicate the validity of the total scale. The result shows that the data of this scale are suitable for factor analysis.

Table 2. Validity test of the questionnaire.

Scale Type	KMO Metric	Bartlett Sphericity Test	*p*-Value
Total scale	0.858	35,368.941	0.000 ***

KMO: Kaiser–Meyer–Olkin, *** indicates a significance level of 1%.

4.2. Descriptive Statistics

According to the survey results, the university students' mastery of SOK is not optimistic. Less than 20% of the students have a good knowledge of environmental pollution, ecological functions, and waste classification, and more than 40% have little or no knowledge (Table 3). This knowledge is learned in primary school, junior high school, and senior high school and is part of the basic scientific and ecological knowledge. However, university students still exhibit a lack of knowledge in this area, and popular science activities still need to be improved by schools.

Table 3. Descriptive statistics of questionnaire responses about science-oriented knowledge (SOK).

Questions and Options	Frequency	Proportion
1. Do you know about the harm of environmental pollution to biodiversity?		
very clear	102	0.76%
know better	1034	7.71%
general	5162	38.51%
not really	5885	43.90%
not at all	1221	9.11%
2. Do you know what ecological functions wetlands have?		
very clear	227	1.69%
know better	1789	13.35%
general	4856	36.23%
not really	5308	39.60%
not at all	1224	9.13%
3. Do you know the specific categories of domestic garbage?		
very clear	227	1.69%
know better	2001	14.93%
general	5261	39.25%
not really	4837	36.09%
not at all	1078	8.04%

University students know more about the policy aspects of ecological civilization. Approximately 50% and 40% of the students are aware of "five-in-one" and "Green GDP (GGDP)", respectively, which shows that the students have a good understanding of POK (Table 4). The "five-in-one" strategy has been emphasized frequently in various documents of the Central Committee of the Communist Party of China, while GGDP is communicated as an academic and professional concept.

Table 4. Descriptive statistics of questionnaire responses about politics-oriented knowledge (POK).

Questions and Options	Frequency	Proportion
1. Do you know the position of ecological civilization construction in the general layout of "Five-in-One"?		
very clear	1742	13.00%
know better	4701	35.07%
general	3590	26.78%
not really	2449	18.27%
not at all	922	6.88%
2. Do you know about GGDP?		
very clear	1298	9.68%
know better	3794	28.30%
general	4038	30.13%
not really	3338	24.90%
not at all	936	6.98%

University students' attitude towards courses, future planning efforts, and pro-environmental behavior are weak (Table 5). More than 90% of students do not support or care that schools offer courses related to ecological civilization, and more than 80% of university students do not know or want to learn about the development direction of combining professional with ecological civilization. Approximately 42.32% and 37.23% of students think that the ecological environment is not very important or not important at all when they choose the city of employment, which shows that university students do not value ecological civilization in future development efforts. This is related to their awareness of the ecological environment. More than 80% of students are not too worried or not worried at all about the overall ecological environment of the country.

Table 5. Descriptive statistics of questionnaire responses about attitude.

Questions and Options	Frequency	Proportion
1. Are you worried about the current overall ecological environment in China?		
worry a lot	132	0.98%
worry	569	4.25%
general	1838	13.71%
Don't worry too much	7166	53.46%
not worried at all	3699	27.60%
2. What do you think of the courses related to ecological civilization offered in schools?		
It is necessary and very supportive	590	4.40%
Can try, support	327	2.44%
Not necessary, not supported	7602	56.71%
It doesn't matter	4885	36.44%
3. Are you willing to develop in the direction of combining your major with ecological civilization in the future?		
very willing	335	2.50%
more willing	2102	15.68%
not very willing	1614	12.04%
very reluctant	6609	49.31%
I'm not sure	2744	20.47%
4. Do you think the ecological environment is important when you choose a city for employment?		
very important	185	1.38%
more important	453	3.38%
general	2103	15.69%
not very important	5673	42.32%
completely unimportant	4990	37.23%

Most university students practice pro-environmental behavior (Table 6). Approximately 55% of students have participated in ecological civilization activities organized by school clubs, but the vast majority of students do not have a high degree of recognition of these activities. More than 90% of students are willing to take part in ecological public welfare activities, and nearly 30% of them have already taken part in those activities. More than 90% of university students publicize their knowledge of ecological civilization to others, which indicates that university students gradually realize the importance of communicating new ideas. Garbage classification used to be a poor behavior in China, and only 10% of university students pay constant or frequent attention to it.

Table 6. Descriptive statistics of questionnaire responses about behavior.

Questions and Options	Frequency	Proportion
1. Have you ever participated in ecological civilization activities organized by school clubs?		
Participated in and thought it was meaningful	448	3.34%
Attended but not thought to be much use	6871	51.26%
Did Not participate but deemed necessary	2634	19.65%
Have not participated and think it is unnecessary	3451	25.75%
2. Do you donate to some ecological public welfare activities?		
already doing this	421	3.14%
If I have such activities around you, I am happy to attend	3607	26.91%
depending on the economy	6729	50.20%
Never consider doing so	2647	19.75%

Table 6. *Cont.*

Questions and Options	Frequency	Proportion
3. Do you actively publicize the knowledge regarding an ecological civilization to the people around you?		
always	372	2.78%
often	2259	16.85%
occasionally	7145	53.30%
hardly	2637	19.67%
never	991	7.39%
4. Do you pay attention to the classification marks on trash cans when you discard garbage on the roadside?		
always	219	1.63%
often	1023	7.63%
occasionally	3632	27.10%
hardly	4485	33.46%
never	4045	30.18%
5. Do you pay attention to the energy-saving and environmental protection logo, when you buy products?		
always	622	4.64%
often	3034	22.64%
occasionally	5175	38.61%
hardly	2837	21.17%
never	1736	12.95%

4.3. Structural Equation Model Results

According to the data presented in Table 7, among the measures of absolute fit indices, the goodness-of-fit index (GFI) is 0.972, which is in accordance with the fitness standard (>0.90) and indicates that the model path graph has a good degree of adaptation to actual data. The adjusted goodness-of-fit index (AGFI) of 0.958 meets the fitness criterion (>0.90), and the AGFI estimate is usually less than the GFI estimate in the model estimate. The root mean square residual (RMR) of 0.036 meets the fitness criterion (<0.05), and the model is acceptable, the smaller the value of RMR, the better. The value of the standardized RMR (SRMR) is 0.038, which meets the fitness criterion (<0.05). The value of root mean square error of approximation (RMSEA) is usually considered the most important fitness indicator. When RMSEA is less than 0.05, the model has excellent fitness. RMSEA between 0.05 and 0.08 means the fitness of the model is satisfactory. The RMSEA of 0.052 in Table 7 indicates that the fitness of the model is satisfactory. In the incremental fit measures index group, all the five indices are in accordance with the adaptation standard, which indicates that the fit degree of the model was good. In the parsimonious fit measures index group, the estimated values of the indices are all greater than 0.5 and thus meet the fitness standard, indicating that the model results are in an acceptable range.

There are significant correlations among SOK, POK, attitude, and behavior (Figure 4 and Table 8). The standardized path coefficient is the correlation coefficient, which measures the correlation between the two variables. SOK has a significant positive impact on pro-environmental attitude, with the path coefficient of 0.565, which means that the more SOK the students master, the higher the degree of pro-environmental attitude will be. SOK also has direct and indirect effects on behavior. SOK has a direct and positive effect on pro-environmental behavior with a path coefficient of 0.137. At the same time, SOK has an effect on behavior through the variable of attitude, and this standardized indirect path coefficient is 0.259.

Table 7. Model fitness test.

	Statistical Test Quantity	Adaptation Standard	Fitting Result
Measures of absolute fit index	GFI	>0.9	0.972
	AGFI	>0.9	0.958
	RMR	<0.05	0.036
	SRMR	<0.05	0.038
	RMSEA	<0.08	0.052
Incremental fit measures index	NFI	>0.9	0.924
	RFI	>0.9	0.903
	IFI	>0.9	0.926
	TLI	>0.9	0.905
	CFI	>0.9	0.926
Parsimonious fit measures index	PGFI	>0.5	0.657
	PNFI	>0.5	0.721
	PCFI	>0.5	0.723

GFI: Goodness-of-fit index, AGFI: Adjusted goodness-of-fit index, RMR: Root mean square residual SRMR: Standardized RMR, RMSEA: Root mean square error of approximation, NFI: Normed fit index, RFI: Relative fit index, IFI: Increase fit index, TLI: Irregular fit index, CFI: Comparative fit index, PGFI: The Parsimonious Goodness-of-Fit Index, PNFI: The Parsimonious Normed Fit Index, PCFI: The Comparative Fit Index.

Table 8. Estimation results of path and load coefficients.

Hypothesis and Path Relationship			S.E.	C.R.	P	Standardized Path Coefficient	Conclusion
Attitude	<—	POK	0.016	−6.655	***	−0.201	False
Attitude	<—	SOK	0.027	17.022	***	0.565	True
Behavior	<—	Attitude	0.027	25.852	***	0.459	True
Behavior	<—	POK	0.022	16.184	***	0.432	True
Behavior	<—	SOK	0.034	4.971	***	0.137	True
SOK	<–>	POK	0.007	41.215	***	0.753	True

*** indicates a significance level of 1%.

POK has a negative impact on attitude with the path coefficient of −0.201 (Table 8), which means that the increase in POK will create a less positive attitude towards the environment. The standardized indirect path coefficient between POK and behavior is −0.092. POK indirectly influences behavior through attitude, and the indirect effect of this path is a weak negative effect. Although POK has a negative effect on attitude, it has a significant positive effect on behavior with the path coefficient of 0.432. The path coefficient of behavior for POK is larger than that for SOK.

Attitude has a significant positive impact on behavior, and the path coefficient is 0.459 (Table 8). In addition, note that the correlation coefficient between SOK and POK is 0.75, which means that they are positively related to each other, thereby showing the fusion of the knowledge groups.

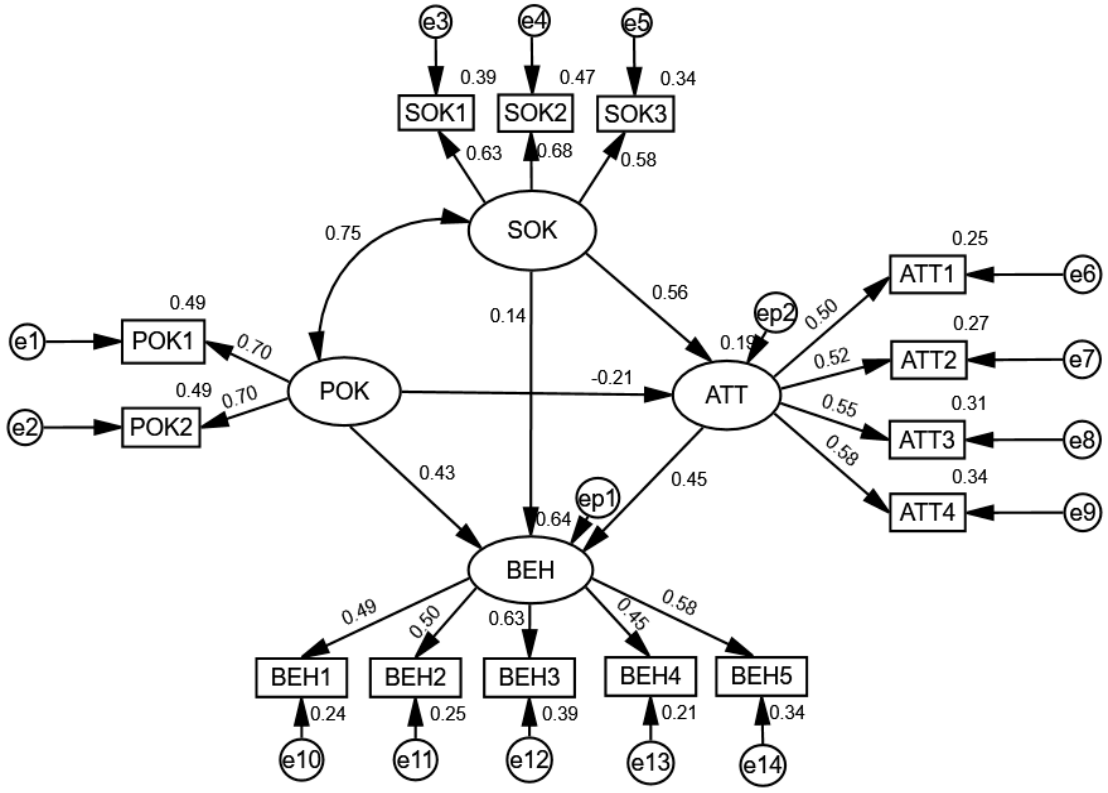


Figure 4. Path of structural equation model for the influencing factors of pro-environmental behavior.

4.4. Scientific Discussion

SOK can, directly and indirectly, influence behavior, and the latter has more influence than the former. On the one hand, SOK significantly affects pro-environmental attitude, and indirectly affects behavior. The effect of SOK on attitude is obvious, which is usually manifested by long-term moral influence, enhancing university students' environmental protection beliefs [46], and indirectly influencing their pro-environmental behavior [47]. This indirect effect means that SOK is easily absorbed by individuals, translated into individual environmental attitude, and promotes pro-environmental behavior [48]. Therefore, schools should impart pro-environmental knowledge, which is widely accepted in many countries [49,50]. It not only increases environmental awareness among students [51], but also promotes pro-environmental behavior [52–54]. On the other hand, SOK can directly promote to a generation the positives of pro-environmental behavior. The knowledge learned in the class is mostly fragmented and theoretical, thus, students may perceive it as less relevant to life, hence, this type of knowledge has a lower direct impact on pro-environmental behavior [55]. However, its indirect influence on behavior through attitude is stronger [56]. Therefore, it is important to improve university students' SOK and enhance their pro-environmental attitude.

POK has a negative impact on attitude but has a significant direct positive impact on pro-environmental behavior. The government's encouraging policies can significantly improve audience participation, especially in the short term [57]. Therefore, POK has a more direct and positive effect on pro-environmental behavior than SOK. However, POK is a "top-down" policy constraint, meaning that its command and control is effective, but the initiative to accept it is limited [10], thus, it cannot improve attitude.

Attitude has a direct and positive effect on pro-environmental behavior. People with a positive environmental attitude are more likely to help solve environmental problems [58]. For example, these particular people are more likely to buy environmentally friendly products [29,39,59] and regularly participate in environmental activities [60]. Attitude is a more powerful promoter of pro-environmental behavior than knowledge, and attitude

shapes behavior by intention [61]. A strong attitude creates an internal drive to develop behavioral guidelines [62].

There is a significant positive correlation between SOK and POK, which indicates that they support each other. SOK is represented by "bottom-up" moral influence, while POK is represented by "top-down" policy constraints, which should expand the comprehensive reform of "top" and "bottom" coordination [63]. The distribution of pro-environmental knowledge based on the SOK and POK aspects should be strengthened, and the concrete understanding of general knowledge should be combined with the macro guidance of policy knowledge to enrich pro-environmental education.

5. Conclusions

Based on China's eco-environmental protection strategy in the new era, the pro-environmental knowledge of university students can be divided into science-oriented knowledge spread by traditional environmental education and politics-oriented knowledge spread through political education. In order to study the different impacts of these two types of education on pro-environmental behavior, a questionnaire was conveyed to more than 14,000 students from 152 universities in China via the snowball method to analyze the conduction path of knowledge, attitude, and behavior using the structural equation model. This method closes the gap caused by neglecting the influence of political power on pro-environmental behavior in previous studies and provides a reference for pro-environmental education in other countries.

The main conclusions of this study are as follows.

Compared to SOK, POK has a quicker and stronger effect on pro-environmental behavior. Because China's political party system determines that the government's encouraging policies can significantly improve university students' participation, especially in the short term. It also shows that ideological and political course, that is, the integration of national policies into the classroom, has been widely implemented and achieved obvious results in China. Therefore, if pro-environmental behavior is expected to improve rapidly, politics education should be strengthened through courses, TV, mobile phones, banners, and APPs to support the understanding and mastery of POK.

SOK has a positive effect on attitude, but POK has a negative impact on attitude because the former is obtained from the education received from childhood and comes from the bottom-up path, which is easier to form a strong sense of identity. But the latter is the knowledge instilled from top to bottom, which may not be understood enough by university students. Thus, the characteristics of POK should be enhanced. The SOK in primary, middle, and high schools, as well as in daily life, has been deeply rooted in the minds of every student, while POK has only been trumpeted in recent years in China, thus, university students do not have a strong sense of POK. Using new media technologies to make policy education work (e.g., "internet + education," watching movies, group discussions, and brainstorming) will promote students' understanding and recognition of POK.

There is a significant positive correlation between SOK and POK. Therefore, the integrated education of SOK and POK should be promoted. SOK should continue to be taught combined with POK. They can together, directly and indirectly, promote the pro-environmental behavior of university students. On the one hand, university students should be encouraged to participate in extracurricular knowledge competition to understand the basic knowledge of the ecological environment, such as garbage classification, water resources, land resources, atmosphere, and biodiversity, as well as their influencing factors. On the other hand, primary school students who will be university students in about ten years should be encouraged to participate in Policy Knowledge Q and A activities to advance their contact time of POK, so that they have more time to understand national policies and enhance their recognition.

Author Contributions: Conceptualization, X.W. and E.W.; methodology, R.W.; software, T.J. and K.Z.; validation, R.W., T.J. and E.W.; formal analysis, J.C.; investigation, R.W. and R.Q.; resources, J.C.;

data curation, R.W.; writing—original draft preparation, R.W. and T.J.; writing—review and editing, R.W. and T.J.; visualization, R.Q.; supervision, J.C.; project administration, J.C. and R.Q. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by National Social Science Foundation of China, grant number 14CKS014 and Ministry of Education Philosophy and Social Sciences Fund, grant number. 19YJZH168.

Acknowledgments: The authors gratefully acknowledge support from the National Social Science Foundation of China (No. 14CKS014), Ministry of Education Philosophy and Social Sciences Fund (No.19YJZH168), and the Fundamental Research Funds for the Central Universities, China University of Geosciences (Wuhan). The authors would like to thank the Chinese college students who took part in the survey.

Conflicts of Interest: The authors declare no conflict of interest. The funders had no role in collection, analyses, or interpretation of data in the manuscript, and the authors declared no conflict of interest.

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