A study on the Current Situation and Countermeasures of Green Travel for College Students

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Abstract: With the rapid development of urbanization, a number of problems such as traffic congestion and air pollution are becoming more and more serious. Green travel is an important part of urban planning, which can effectively alleviate environmental pollution. As an important part of urban population, college students have distinct characteristics in travel demand, travel mode, and other aspects. Their cognition of green travel also has a tremendous impact on urban traffic planning and development. Taking Shandong Agricultural University as a case study, this study investigated the green travel situation of college students in the form of questionnaire, and analyzed their travel characteristics and influencing factors. Most people think that when dealing with the traffic problems, the government should play a major role and put forward rectification measures; in the existing green travel mode, the use frequency of bicycles or electric vehicles is not very high, and there are many problems in the use process; for short-distance travel, many people use walking or co-riding, etc. After analyzing the relevant factors, this study proposed targeted measures to encourage and guide students to choose green travel.

1. Introduction
With the continuous and rapid development of China's urban economy, the traffic demand of urban residents is increasing rapidly, and the resulting traffic congestion, environmental pollution and energy consumption are seriously restricting the sustainable development of China's urban economy [1]. Green low-carbon life has become an inevitable development trend, and green travel has gradually developed into a normal. Since it was proposed, green travel has been positively responded by environmental protection people, however, a considerable number of citizens have not realized the importance of green travel [2].

1.1. The concept of green travel
The purpose of green travel is to guide people to adopt low energy consumption, high energy efficiency, low pollution, efficiency and fairness, which are conducive to the healthy development of cities and residents [3]. Green travel behavior refers to the behavior that individuals actively implement and adjust the existing travel mode to green travel mode [4]. It is generally believed that the green transportation modes include walking, bicycling, public transportation, and subway.

Many countries have taken measures to promote the green transportation construction process. For
example, in 2007, France introduced the "bicycle city" scheme to encourage people to travel green; Germany's off-peak commute and flexible work system reduced traffic congestion and environmental pollution, and made full use of road resources [1].

In 2012, China has classified green travel into “The 12th Five Year Plan”, explicitly proposing "encouraging residents to choose green travel mode" and "advocating green travel" [3]. Zong Fang and Jun Zhicai (2007) analyzed the impact of public transport priority development strategy on the choice of residents' travel modes based on the logistic mode selection model [5]. Jinnan (2013) analyzed the influencing factors of low-carbon travel mode choice and the interaction mechanism among the factors, and discussed the important factors affecting low-carbon travel choice.

1.2. Travel characteristics of College Students
As a special group of urban residents, the travel characteristics of college students are similar to that of the residents in the city, and there are obvious differences [7]. The research shows that college students' travel is time and space concentrated, and their travel behaviors are flexible, and they are easily affected by travel costs and time [3]. At the same time, college students have a high level of education and are more likely to accept new ideas such as green travel, which has an obvious driving effect on other groups [9]. Understanding the situation of green travel of college students has good reference significance for improving the development of urban green traffic.

2. Method
In order to get a more comprehensive understanding of green travel of college students and their awareness of related concepts, this paper takes Shandong Agricultural University as an example to investigate. Based on the reviews of the domestic and foreign literatures on green travel, this paper determines the research theme and methods, uses questionnaire survey and statistical analysis, and uses descriptive statistical analysis to study the basic situation of individual characteristics and evaluate each parameter.

A total of 550 questionnaires were sent out and 503 were recovered. Through descriptive statistical analysis, this paper makes a statistical analysis of the overall situations of college students' choices of travel modes, green travel behaviors, and its influencing factors. The cross statistics and analysis are performed, and the correlation between variables is obtained. Combined with the influence of students' psychological factors, this paper puts forward policy recommendations that can promote green travel of college students in China.

3. Results
3.1. College Students' cognition of green travel
In the investigation of the reasons of environmental problems, 74.55% of the respondents thought that urban traffic problems are due to the excessive occupation of traffic resources by cars, 58.05% of the respondents thought that the awareness of public transport laws and regulations are weak, 47.71% of the respondents thought that the traffic management is unscientific, 39.17% of the respondents thought that the main causes are unreasonable and inconvenient arrangement of public transport lines and stations.
Figure 1. Distribution of college students' opinions on reasons of urban traffic problems.

In terms of the cognition of green travel, the survey results showed that (Figure 2), 97.81% of the respondents preferred walking, bicycling, bus, and subway, followed by 69.38% of them preferred to use clean energy vehicles. However, 59.84% of them didn't think that carpooling is a relatively green way of travel. So it seemed that most of them in favor of Green travel is only a general concept, but the specific boundaries are not clear. Among the survey population, 77.34% said that they would choose green travel even if they would sacrifice some convenience, so it could be seen that most people were still very aware of low carbon. Those who have a stronger sense of environmental protection are more likely to refer to other people around them.

Figure 2. Distribution of college students' opinions on green travel.

3.2. Green travel behavior of college students and its influencing factors
Firstly, according to the survey, as shown in Figure 3, 73.36% of the people think that the most critical factor is economic benefits. Secondly, the travel distance and the urgency of travel, both of which are supported by more than 67% of the people, so we can combine these two factors in promoting green travel. It is very difficult to shorten the travel distance, so we can start from reducing the travel time and increasing the travel speed. Bus is recognized as a green and environmental-friendly means of transportation. When it comes to the rush hour of going to and from work, traffic jams will easily occur in the sections with large traffic flow, sometimes up to half an hour or more, which greatly limits the convenience of bus travel. For passengers who have urgent needs for travel, this choice is easily
excluded, so the bus lane is standardized. On the other hand, more than 41.75% of the people think that the traffic conditions, convenience and shortcut have a great impact on the choice of travel mode. These two factors are mainly based on the subjective will of the travelers, and can mainly solve this problem by strengthening the awareness of green environmental protection of the actors themselves. In addition, more than 33% of the people think that the purpose and safety of travel are the priority factors when choosing different modes of transportation. These two points, especially the latter, require the public administration to take appropriate and reasonable measures in traffic management.

Figure 3. Distribution of factors to consider when choosing transportation.

75.36% of the respondents spend between 800-1500 yuan per month, and college students spend less than 100 yuan per month on traveling. Combined with table 3-3, we can find that most of the students of Shandong Agricultural University spend less than 100 yuan per month on traveling, more than half of them spend less than 50 yuan per month on public transportation. The proportion in use is not high, which to a certain extent can reflect the phenomenon that students do not often use public transport when they travel, and reflect the frequency of green travel needs to be strengthened.

| Monthly consumption | <20¥ | 20-50¥ | 50-100¥ | >100¥ | Total |
|---------------------|------|--------|---------|-------|-------|
| <800¥               | 46(48.94%) | 43(45.74%) | 3(3.19%) | 2(2.13%) | 94    |
| 800-1000¥          | 74(38.74%) | 95(49.74%) | 22(11.52%) | 0(0.00%) | 191   |
| 1000-1500¥         | 70(39.33%) | 68(38.20%) | 35(19.66%) | 5(2.81%) | 178   |
| 1500-2000¥         | 12(38.71%) | 10(32.66%) | 6(19.35%) | 3(9.68%) | 31    |
| >2000¥             | 5(55.56%) | 4(44.44%) | 0(0.00%) | 0(0.00%) | 9     |

The green travel transportations that students are most often chosen are walking, bus and bicycling. The results showed 88.07% of the people think that the factors that affect the choice of walking are travel distance; more than 60% of the people think that weather is an important factor to choose walking; 45.13% of the people think that there are many vehicles and safety is also an important factor to consider. When they do not choose bus as a way of travel, 58.85% of the students think that the bus is too crowded. In addition, too many times of transfer, too long waiting time, slow bus speed, and long driving time will also make many people give up the choice of bus. According to the survey, on the premise of considering the distance, whether the bus card or monthly card is available or not has no effect on student’s choose to take bus, 36.38% of the students basically, while 50.5% of the students consider the travel demand or time requirements, which depends on the situation.
4. Conclusion
According to the survey, most people are aware of the recognition of choosing green travel, with a high degree of willingness, but college students do not have enough understanding of the concept of sharing and other common energy conservation and environmental protection. Group psychology can affect or even change people's behavior to a certain extent, but it should be guided according to the circumstances, otherwise it is easy to follow the trend and compare, which is not conducive to the promotion of green travel. Most people think that government should play a major role in promoting the rectification measures. It is believed that the most important thing is to strengthen the publicity of green travel. The second is to adjust the bus or subway routes and strengthen the road control, improve the road structure, relieve the traffic pressure and improve people's willingness for green travel and environmental awareness; the excessive use of traffic resources by cars is considered by most people to be the main cause of urban traffic problems; it is an urgent problem for relevant departments to take corresponding measures for different reasons of not choosing green travel mode. Therefore, in addition to strengthening citizens' awareness of environmental protection, increasing external supervision is also an important way to promote green travel.

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