Optimizing Operation and Management for Sharing Bicycles of Colleges and Universities: A Case Study of Chenggong District in Kunming

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Abstract Aiming at the problem of shared bicycles in the operation management of colleges and universities, this paper surveyed the three universities in Kunming Chenggong University City by questionnaire and statistical analysis, and found that the problem is quite serious that shared bicycles were vandalized, stolen, parked optionally and so on, and deeply analyzed the root causing these problems. Finally, suggestions are made from the aspects of improving students' sharing awareness, formulating campus vehicle specifications, improving enterprise product research and development technology, and improving relevant department’s governance mechanisms. These suggestions are of great significance for improving bicycle regulations, improving corporate social responsibility, and comprehensively assessing the quality of students.

1. Introduction
In this paper, the three universities in Kunming Chenggong University City: Yunnan Minzu University, Kunming University of Science and Technology, and Yunnan University are the subjects of the problem that shared bicycles are vandalized, stolen and parked optionally in universities. Research group uses methods of questionnaires and statistical analysis, which are divided into online questionnaire star survey and offline questionnaire survey. The investigation time is from the end of June to the middle of July 2018. 160 paper questionnaires were distributed, including 157 valid questionnaires and 113 valid online responses, with a total of 270 valid questionnaires. This research will provide a theoretical basis for improving the operation and management of campus shared bicycles, and also help to form a spatial pattern, industrial structure, production methods and lifestyles that conserve resources and protect the environment. it is conducive to promoting the construction of quality education in colleges and universities and Students improve their learning and quality of life.

2. Characteristics of consumer groups in Chenggong University City
From the perspective of spatial distance distribution, the distribution of colleges and universities in Chenggong University City is relatively crowded. From the total quantity, the consumer groups sharing bicycles are mainly students. For the three universities in Chenggong University City, the project team launched an investigation. Among the valid questionnaires, 104 boys and 166 girls, the
age group is mainly distributed between 18-30 years old. The majors are undergraduates and postgraduates, among which there are 140 undergraduates and 118 graduate students.

By investigation and statistics, the characteristics of the consumer groups in Chenggong University City are as follows: (1) The scale of use is large. According to statistics, the project team found 95.19% of the students have used shared bicycles. It can be seen that shared bicycles are widely used in Chenggong University City. (2) The travel time is mainly concentrated at 7am-9am, 11pm-13pm, and 17pm-19pm, which is the peak period for three meals, and the demand for weekends and holidays is more prosperous. (3) Brand use is mainly ofo (usage rate 81.48%), Hellobike (usage rate 57.04%) and Mobike (usage rate 55.56%). (4) The frequency of use is not high. 27.04% of the students used 1-5 times a week, and 34.81% of the students used it within three times in a month. (5) The time of every use is mainly concentrated within half an hour, 46.07% of students use 0-0.5h at a time, and 37.08% of students use 0.5-1h at a time. (6) The main reasons for consumption are going out to play, and 45.93% of the students are in order to change to the subway.

3. Operation and management of shared bicycles in Chenggong University Town

3.1. Significantly profitable shared bicycles’ parking spot is very few
At present, the shared bicycles in Chenggong University City are mostly distributed outside the university, near the subway, and along the street and so on. The parking is disorderly and there is no special person in charge to supervise. According to the survey statistics, on campus, shared bicycles that are not in the designated location, 50% of the students think that they are on the grass, 49.63% of the students think that they are near the flower-beds, 43.33% of the students think that they are on the sidewalk. Most of the profit models of shared bicycles are rental income, deposit income and advertising revenue.

3.2. Launch and use of shared bicycles
As of July 1, 2018, there were four shared bicycle operators in Kunming: Mobike, ofo, Hellobike and Green orange bike. They have reported and put in about 250000 shared bicycles, with more than the number of bicycles reported, and the registered users are about 4 million. The annual average number of cycling days is more than 300 days, and the average number of cycles per day can reach 3.5 times in Kunming. Sharing bicycles in the same period blindly put into the market, it is not convenient for suppliers to maintain in time, but also easy to cause traffic jam phenomenon. In the Kunming Chenggong University City, some schools, under the name of safety management, prohibit sharing bicycles into the campus, which is simple and rude.

3.3. Serious damage to shared bicycle equipment
From the point of view of the damage condition, the shared bicycle is damaged in a variety of situations. According to the survey data, the subjects think that the failure of brake, the removal of license plate, two-dimensional code being destroyed and so on are cases of the damaged shared bicycle. In 270 questionnaires, there were 136 people who chose the brakes to fail, 138 people chose the pedals to fall, and 135 people chose the two-dimensional code to be destroyed. On the maintenance service of damaged shared bicycle, 74.07% of the students did not know that there were several shared bicycle maintenance sites near the campus, while 7.41% of the students only knew one maintenance site. This shows that most students never pay attention to the maintenance services of sharing bicycle and do not cherish public property.

4. Reasons for the poor operation and management of the shared bikes in Chenggong University Town

4.1 Lack of effective management system
As we known, parking a bicycle at will, taking bicycle as your own, maliciously destroying a bicycle and other phenomena are common. Firstly, college students have no source of income and are not satisfied with some deposit services of Shared bikes. Even some deposits cannot be returned, which aggravates their behaviors of destroying bikes and stealing bikes. Secondly, setting the parking point of Shared bikes is not reasonable. In the university town of Chenggong in Kunming, relevant administrative departments can set up Shared cycle parking points at the subway entrance, near Juxian street and Shilin street and on campus where there are a lot of people. Finally, the damaged Shared bike is not only man-made damage, but also natural damage. This fully demonstrates that the shared bike needs effective management system to improve the students' sense of sharing and corporate logistics services.

4.2 Imperfect integrity evaluation system
Under the current credit system of Shared bikes, there are still some people who do not follow the transport rules, but do not receive serious punishment. At the campus of Chenggong university town, there was no shared bike. In order to explore the reasons, we learned that some schools prohibit sharing bicycles into the campus for safety management. Some problems in operation and management reflect the honesty of college students. This fully shows that under the current system, the Shared bike industry lacks an effective credit evaluation system to guide and encourage students' honest behavior.

4.3 Enterprises have a poor grasp of the market
Enterprises only pay attention to their own interests without considering social benefits and social responsibility. With the continuous investment of Shared bikes in various cities, some places’ markets of shared bikes have saturated, which leads to the waste of resources. Exactly how much each place needs to shared bicycles, enterprises in the launch, did not consider the bearing capacity of the place. Some bike-sharing enterprises do not give due attention to the problem of refund of deposits or excessive deposits.

4.4 Weak supervision by relevant departments
The relevant departments, as the institutions of social management, have not formulated the corresponding standardization regulations and laws and regulations as the actual situation changes. If the bike is damaged unintentionally or is intentionally damaged and find the corresponding person difficultly, the corresponding management department will not deal with it. Users and enterprises is a rental relationship. Breaking and stealing shared bikes is dishonest behavior. Authorities could make a big difference if they recorded the credit requirement in the user's life file, rather than just sharing bikes’ APP record.

5. Suggestions for shared bicycle operation and management in university town

5.1 Establishing an effective management system
Relevant management departments should establish an effective management system to restrict and guide students' behaviors and improve students' legal awareness and sharing awareness. As a contemporary college student, we should have a sense of social mission and responsibility. When we see a shared bicycle falling down on campus or elsewhere, we should "help" in good faith; when we see that the shared bicycle is exposed to the wind and rain, we should "take it" under the eaves or in the carport; When we see that the shared bicycle is “severely injured”, we should promptly report it to the relevant department, and we hope that it will “early recover”.

5.2 Building cooperation between School and Enterprise
Enterprises should cooperate with universities to supervise and guide students' behavior. For example, students park their shared bicycles at random, the school can plan to share the specific parking area of
the bicycle on the campus, and post the slogan “Love the shared bicycle, start from me” in the parking area. For people who destroy shared bicycles, the school gives the corresponding punishment measures. For students who do not comply with the bicycle rules, encouraging other students to report, for the students who report, the school points to the evaluation of their ideological quality. The school can also divide the maintenance and management of shared bicycles into the life department of the student union or the Young Volunteer Association to help manage, so that some students take the lead and put it into practice of “civilized travel and building a civilized campus”. Every school year, for students who perform well, the school can award “Certificate of Campus Civilization”, which is recorded in the students’ integrity file. According to the survey statistics, when the total credit score is 100, most of the students think that when the score is between 70 and 80, they should propose warning for using a bike. When the score is between 60 and 70, the times using a bike should be limited. when the score is below 60, the car should be not available.

Table 1 Percentage of students in different grades

| credit score | 70-75 | 76-81 | 82-87 | 88-93 |
|--------------|-------|-------|-------|-------|
| Give warning | 37.04%| 30.74%| 20.74%| 11.48%|

Table 2 Percentage of students in different grades

| credit score | 60-65 | 66-71 | 72-77 | 78-83 | 84-89 |
|--------------|-------|-------|-------|-------|-------|
| limit times  | 28.15%| 30.37%| 22.59%| 13.33%| 5.56% |
| cannot use   | 53.7% | 18.15%| 17.04%| 7.41% | 3.7%  |

5.3 Improve corporate social responsibility and development technology

(1) For bicycle’s quantity, the quantity should base on the needs of users’ market. When putting shared bicycles into the market, enterprises cannot blindly put too many bikes for the purpose of profit and result in the waste of resources. Enterprises should always take the convenience of people to travel as their starting point and increase or reduce the number of bicycles as market demand changes. For schools, operators can decide the number of bicycles according to the number of people in each university.

(2) For disordered parking, malicious damage and natural disaster damage of bicycles, operators can assign related personnel in specific areas, plan convenient and centralized parking areas, reasonably allocate vehicles, build shelters for bicycles, clean dirty bicycles in time, repair damaged bicycles, and check bicycles regularly so as to exchange bicycles, such as, check them twice or three times a week. Appropriate restrictions are imposed on non-parking areas, and operators can use GPS to locate that bicycle users who do not park according to regulations should be fine. In schools, managers can set up parking spaces, such as the side of the canteen, the side of the dormitory, near the teaching building, and beside the entrance of the library, so as to make parking spots convenient.

(3) About the construction of credit system, operators should further improve the construction of user credit system. Operators can cooperate with multiple credit information platforms, take credit score as the presupposition of green travel, promote the construction of personal credit supervision platform. Under the system of good faith, the users must be made of real name when they use a shared bicycle: one person can only register one account, only one bicycle can be scanned, and if necessary, brush his face should be need to verify his identity, to quantify the credit of the user with integral points, and to punish the violator with the punishment system of dishonesty.

(4) In view of the loophole of the bicycle system, the enterprise should make the product update and upgrade to improve the operation and management by the means of technological innovation. First of all, enterprises should improve the quality of bicycles itself to reduce the damage rate and prolong their life spans. Secondly, cooperation of the enterprise and the credit information platform, may enable the user to realize the deposit-free vehicle. Finally, the shared bicycle APP system should set up the function of anti-theft, alarm and search performance-price ratio, so as to reduce the damage rate and theft rate of bicycle, and facilitate users to choose bicycles according to their preferences. According to the survey data, the percentage of students who agree to set up anti-theft and the alarm
function is 81.86%, and the percentage of students who agree to search function of cheapest bicycle nearby is 74.08%. This means it meets the needs of public travel and operator management.

(5) Operators should establish the correct use standards for shared bicycles, and use the media to promote the civilized use of bicycles, advocate social morality, create a green, healthy and convenient traffic atmosphere, and inherit contemporary positive energy.

5.4. Strengthen supervision and perfect governance mechanism
The relevant management department should strengthen the management of the shared bicycle enterprises, play the macro-control role, and supervise the market behavior of the operation enterprises. First of all, relevant local traffic management departments should constantly improve the industry mechanism according to the actual situation, so that enterprises consciously accept the supervision of government departments. With regard to the deposit of shared bicycle enterprises, the government should supervise the enterprises to set up special deposit accounts, maintain user's fair trading rights, and try their best to encourage enterprises to provide deposit-free services. Secondly, the government should restrict the bad competition among operators, maintain traffic order, formulate industry standards, issue corrective opinions and perform government functions. According to the survey data, it can be seen that most college students think that the government should further introduce relevant policies to strengthen the operation and management of shared bicycles, indicating that the current management is not enough. Finally, the government should strengthen the efforts to popularize the law so that citizens know the law and abide by the law.

6. conclusion
The optimal operation and management of Shared bicycles is conducive to construct a green travel lifestyle, establish an environment-friendly and resource-efficient university style, decrease the cost of enterprise and create a good brand image. This paper discusses the management of shared bicycle optimization operation, which not only can provide references for the bike campus management, and also can provide the reference for urban green transportation operation management.

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