

A Market-Oriented Study on the Usage Intentions of International Students Towards a Shared Bicycle Platform and Its Optimization Design

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ABSTRACT

The acceleration of globalisation has resulted in a notable increase in the number of international students worldwide. However, international students frequently encounter numerous obstacles when attempting to integrate into the local culture and society. To address this issue, this study presents an innovative mobile application, the "Bicycle Sharing and Cultural Exploration Platform for International Students," which aims to facilitate integration into the local culture and society. The platform offers not only bicycle-sharing services but also facilitates international students' comprehension and engagement with local history, art, customs, and social values through the provision of intelligent route planning and cultural exploration guides. This paper presents a discussion of the design concept, functional features and user experience optimisation of the platform, based on the identified needs of the Chinese international student market. By employing a simple and intuitive interface design, offering multiple languages and reducing advertising, the platform strives to provide an open, inclusive and diverse learning and living environment, facilitate international students' better integration into the local culture and enrich their study abroad experience.

Keywords: International Students, Bike-sharing Platform, Cultural Exploration, User Experience Optimisation

1. Introduction

In today's era, globalisation has become an important force driving the world's development. As the process of globalisation continues to accelerate, cities around the world have witnessed a remarkable growth in the number of international student groups. These young scholars cross borders to pursue opportunities for education and personal growth, bringing about multicultural exchanges and collisions. However, while international students bring vitality and diversity to local societies, they often encounter challenges in gaining a deeper understanding of and integrating into local cultures. Language barriers, cultural differences and social interaction difficulties make this process complex and challenging.

In order to solve these problems, we have innovatively developed the "Shared Bicycle Cultural Exploration Platform for International Students". This platform is not just a bike-sharing service, it is also a bridge for cultural exchange, aiming to help international students gain a deeper understanding of local history, art, customs and social values through cycling and exploration. Our service concept is based on a simple belief: through hands-on experience and practice, people can better learn and understand different cultures.

According to the latest statistics, the global market for international students is experiencing unprecedented growth. The number of international students worldwide is growing at a rate of approximately 5 per cent per year, demonstrating a strong demand for international education. Especially in China, the number of international students is showing a steady increase. According to the 2023 Statistical Bulletin on the Status of Education in China released by the (Ministry of Education 2023),

a total of 516,000 international students from 214 countries and regions were enrolled in Chinese universities and colleges. How to better integrate international students in China into the local culture and make them have a better cultural exchange experience has become an urgent problem to be solved.

As a unique group among the international communication audience, international students are a key force in international communication that cannot be ignored. They are an important 'spark' and 'messenger' of international cultural exchange. In terms of educational attainment, most international students have a bachelor's degree or above and are highly educated. They have a certain degree of influence in their home countries, that is, they are an elite audience. In terms of age composition, international students are mainly young and middle-aged people. They are highly motivated, influential, active, and are major players in society. In terms of interpersonal communication, As interculturalists in their host countries and destination countries, international students have rich social network connections, and their media use presents the characteristics of a 'combination of Chinese and foreign elements' . They are high-quality 'information sources' and 'communicators' in foreign communication activities. (Sun, S. 2023)

In response to the needs of this particular group, our platform offers an exclusive cultural exploration service. Using shared bikes as the main carrier, combined with intelligent route planning and cultural exploration guides, our mini-programme platform provides users with a new way to experience culture. Users can not only exercise through cycling, but also gain a deeper understanding of local culture and history during the journey. In addition, the app also provides community services, in which international students from all over the world can communicate with each other, and is also a cross-cultural communication platform.

At the same time, we also noticed that international students often encountered some difficulties when using China's bike sharing, such as the unfriendly language interface of the application (APP), which made it difficult for them to understand; the complicated operation of the APP, which lacked simplicity; and the frequent interruptions of advertisements in the process of using it. These problems not only affect their usage experience, but also become obstacles in integrating into local life.

Therefore, we have taken these factors into consideration when designing the "Bike Sharing Cultural Discovery Platform for International Students". Our app's interface is simple and intuitive, with multi-language options to ensure that all users can easily get started without worrying about language barriers. Popular operating systems are now available in multiple language versions, and Chinese versions of operating systems fully support input and display in both Chinese and English, so there is no need to consider the language support of the operating system. For software users, the language barrier is the biggest problem affecting software efficiency. Therefore, when designing a multilingual software system, it is necessary to provide the option or switching function of multiple language versions. The author (Yang, H.& Sun, S.2002)summarizes two main aspects related to the implementation of the system: the system interface mainly includes: title bar, menu, toolbar, status bar, etc.; human-computer interaction information mainly includes: human-computer interaction prompt information, help information, etc.At the same time, we have optimised the user experience by reducing unnecessary advertisements so that users can focus more on cycling and cultural exploration.

In short, "International Students Bicycle Sharing and Cultural Exploration Platform" is not only a transport provider, but also a facilitator of cultural exchanges and an assistant for international students to integrate into new environments. We are committed to providing international students with a more open, inclusive and diversified learning and living environment through innovative service modes, so that they can not only gain knowledge recharging, but also experience the cultural richness and colourful life during their overseas study trip.

2. Significance of the Development of the Platform

2.1 Current needs of current international students

As we all know, China is one of the fastest-growing economies in the world, and at the same time, it has sufficient educational resources with many world-renowned universities, thus attracting students from all over the world to study in China. However, through our preliminary research interviews with some international students in Beijing, we found that they have problems such as insufficient understanding of the local culture and difficulties in integrating in Beijing. Specifically, there are the following points:

First of all, bike sharing can solve the problem of the "last kilometre" of urban public transport, providing great convenience for residents' short-distance travel and commuting (Gao, Y. 2017), and becoming an important part of urban transport. Shared bicycles have improved the effective utilization of transportation facilities, optimized the spatial layout and travel structure of urban transportation, and have a good emission reduction effect. (Yang, J & Liu, Y. 2018). However, for many foreign students, the language barrier is a problem, and the complicated steps to rent a shared bicycle cause trouble for foreign students.

Moreover, most foreign students are interested in China's traditional culture and scenery, and want to travel on weekends and holidays to experience the exotic atmosphere, bike sharing is their primary choice for short-distance travel, but there is a lack of professional cycling routes, and they are often at a loss when it comes to the many routes of varying quality that are shared on the Internet.

Finally, based on cultural and customary differences, as well as communication problems, most international students want to make more friends to try to integrate into the new environment, but due to the differences in schools and locations, they lack friendly and convenient cultural exchange platforms to seek like-minded friends. When international students come into contact with and study these contents, they actually assume the role of cultural inheritors. They can not only enhance their understanding and identification with Chinese culture, but also become ambassadors for promoting Chinese culture after returning home. (Sheng, C. 2024)

2.2 Provision of cultural exploration services

Intelligent Route Planning: We will develop an intelligent route planning system for international students in Beijing, taking into account the characteristics of Beijing's history, culture and attractions, and providing users with a rich variety of cultural exploration routes, such as the Central Axis, the Forbidden City, the Great Wall, and the 798 Art District.

Themed Riding Activities: We will organise a series of themed riding activities covering the history, culture, art and cuisine of Beijing, such as "Hutong Exploration" and "Beijing Cuisine Tour", etc., and senior guides will lead the international students to have in-depth cultural experiences.

Cross-cultural exchange platform: We will establish an online community platform to organise regular online and offline cultural exchange activities, including language exchange sessions, cultural sharing sessions, and themed lectures, to promote interaction and exchange between international students and local residents in Beijing.

2.3 Optimising the experience of the international student community

Multi-language support: We will ensure that the platform provides multi-language support, including English, Chinese and other languages used by major international students, in order to enhance user convenience and experience.

Simple and friendly interface design: We will continue to optimise the interface design of the platform to ensure that the user experience is simple and intuitive, and to reduce the difficulty and resistance of international students in using it.

Reduce advertisement interference: We will minimise unnecessary advertisement interference to ensure users' comfort and concentration when using the platform, especially in the Beijing usage environment.

2.4 Marketing and cooperation

Marketing: We will increase the platform's exposure and user sign-ups through advertising on Beijing's major campuses, international student communities, and online social media platforms, as well as by setting up booths and promotional activities at major cultural events in Beijing.

Partnerships: We will establish partnerships with universities, study abroad organisations, and cultural and tourism organisations in Beijing to jointly promote our cultural exploration services and expand our user base and influence.

2.5 Collecting user feedback and improvements

User Feedback Mechanism: We will establish a regular user feedback mechanism to collect and analyse users' opinions and suggestions through online surveys, user evaluations and customer service feedback in order to continuously improve and optimise our services.

Continuous Improvement: We will continue to improve our platform and services based on user feedback and market changes, including updating and upgrading of functions, adjusting and optimising the content of activities, etc., in order to maintain our competitive edge and user satisfaction. At the same time, adopting platform supervision strategies, incorporating diverse cooperative governance entities into the platform, and forming a relatively stable, sustainable, spontaneous, and benign system under the constraints of platform rules. (Zhang, B. & Hua, Y. 2019)

2.6 Planned platform expansion

Regional Expansion: After successful operation and stable development, we will consider expansion in other cities or even other countries to expand the market and enhance our brand influence.

Service Expansion: We will continue to expand our cultural exploration services, including the addition of new thematic activities and the introduction of customised services, etc., in order to meet the growing demand and diversified cultural exploration needs of our users.

2.7 Providing social value

Through cultural exploration and exchange activities, it provides a platform for cultural experience, helps international students to better understand local culture, promotes exchanges and integration between different cultures, and enhances friendship and understanding between countries. In terms of urban construction and industrial transformation and upgrading, this has played a positive role in promoting the green transformation of China's transportation sector and achieving the dual carbon goals in the transportation sector. (Dai, Y., Wang, Y., & Tong, X. 2024)

At the same time, by promoting Beijing's culture and attractions, it can help enhance the city's image and attractiveness, attract more international students and tourists to Beijing, and promote the development of the city's economy. It promotes regional cultural exchanges and co-operation; it also enriches the life experience of international students, who may feel lonely and uncomfortable in foreign countries, and such a platform provides them with a new way of cultural experience, so that they can better integrate into the local life, enrich their own study abroad experience, and improve the quality of life and sense of well-being of international students.

As a green mode of travel, encouraging international students to ride bicycles is not only good for health, but also helps to reduce traffic congestion and environmental pollution in Beijing and promote the concept of green travel, which is not only in line with the needs of the "dual-carbon era", but also has a positive impact on the quality of life of the residents and the image of the city.

3. Discussions

3.1 Policy context: PEST

Governments are paying increasing attention to the management and services for international students, providing various facilitation and support measures, and the market for international students has great potential. As of 2017, China has become the largest recipient country for studying abroad in Asia, and the education industry of studying in China has become an important part of China's education industry. (Wang, Z. 2023)

3.1.1 P (Political)

Since the beginning of the 21st century, China's higher education endeavours have made great strides. China has become the world's third largest importer of international students after the United States and the United Kingdom. Under the trend of globalisation, the development of international students' education has become a worldwide trend and trend. (Analysis and Forecast of International Students in China from 2006-2018)

Table 1: Relevant policies proposed by China on international students

Times	Formulation
2010	In order to implement the Outline of the National Medium- and Long-term Education Reform and Development Plan (2010-2020) and to promote the further development of study in China, the Ministry of Education has formulated the Study in China Programme. (Li, H. 2014)
2018	In order to conscientiously implement the spirit of the 19th CPC National Congress, promote the connotative development of higher education, and improve the quality of higher education for international students, the Ministry of Education has formulated the Code of Quality of Higher Education for International Students (Trial). (Meng, Y. 2020)
2019	The Modernisation of Education in China 2035 proposes the implementation of the Study in China Programme, the establishment and improvement of a quality assurance mechanism for study in China, and the comprehensive improvement of the quality of study in China. (Zhang, M., & Liu, B. 2020)

In addition, as of 2020, China had established educational exchanges and cooperation with 188 countries and regions, and signed agreements on mutual recognition of higher education degrees with 54 countries (Tang, J., & Lin, J. 2021). Among them, the Ministry of Education funds students from the other country to study in China in the form of Chinese government scholarships, while Chinese students study overseas through scholarships provided by the other country. Chinese government scholarships are an important part of the work of studying in China, which has strongly improved the level and level of the source of students coming to China (Liu, B., & Wang, T. 2020). From 2013 to 2019, China's final account of expenditure on education for studying in China grew from 168,734,500 yuan to 375,753,930 yuan. Over the years, a large number of excellent and outstanding alumni have emerged among Chinese government scholarship students, making positive contributions to promoting friendly cooperation and exchanges between China and foreign countries. (Zhao, D. 2020)

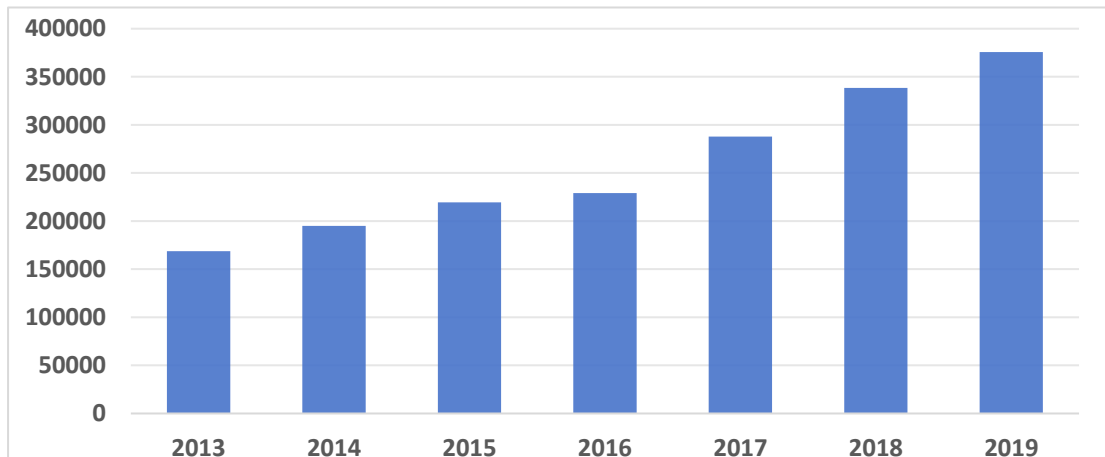


Figure 1: China's final expenditure on education for studying abroad, 2013-2019 (million yuan)

3.1.2 E (Economy)

At present, China's economy has moved from the stage of high-speed development to a new stage of high-quality development, the party's twentieth report puts forward to accelerate the construction of a new development pattern with the domestic macrocycle as the main body and the domestic and international double-cycle mutually reinforcing, and calls for accelerating the green transformation of the mode of development, and promoting the greening of economic and social development and low-carbonisation as the key link to achieve high-quality development, and the development of the bicycle industry will help China's economic greening and low-carbon development. (Wang, J. 2023)

According to the "Shared Riding Pollution Reduction and Carbon Reduction Report" published by the (Environmental Development Center of the Ministry of Ecology and Environment and the Central Joint Certification Centre 2021), it is shown that the cumulative carbon dioxide emissions reduced by users of Meituan Bicycle and Electric Bicycle since their operation is 1,187,000 tonnes, which is equivalent to the carbon dioxide emissions reduced by 270,000 private cars travelling for 1 year. Based on all the operating mileage of Meituan ever, the cumulative pollution and carbon reduction contribution of shared bikes and shared motorcycles can be calculated as shown in the table below:

Table 2: Pollutant emission reductions from Meituan's bike sharing launches

Form	Mileage (km)	Emission reduction (t)				
		CO ₂	CO	HC	NO _x	PM
Shared Bicycle	196.08	954932.6	5019.8	431.4	470.6	137.3
Shared Motorcycle	42.53	231810.8	1441.9	123.3	114.8	38.3
Add Up the Total	/	1186743.4	6461.7	554.7	585.4	175.5

It can be seen that bike-sharing has a significant effect on energy saving and emission reduction, and promotes the development of a green and low-carbon economy.

3.1.3 S (Social)

International students coming to China are an important force for telling Chinese stories and spreading Chinese culture. At present, the teaching of Chinese culture to international students is mainly classroom teaching (Huang, C., & Hu, R. 2023). On the issue of teaching international students in colleges and universities, on the one hand, in the module of curriculum, many colleges and universities do not take Chinese culture as the main course of education for international students, and they just stay at a single level of Chinese language learning; on the other hand, the mode of classroom teaching is relatively single, and the students are given a simplified and unified education. These are obviously not enough. Diffuse and expansive second classroom platforms and rich cultural theme activities are important ways to enrich the extracurricular life of international students. Relying on the curriculum to guide international students in China to understand, befriend, and love China is an inevitable measure to implement the new requirements of education for international students in China. (Bu, C., & Tie, Z. (2024)

In addition, China has a rich regional culture, and pure classroom teaching cannot help international students understand the regional culture well, so extracurricular cultural experience activities are very necessary for international students to integrate into the local area, and the three-level cultural experience activities in school, city and Chinese culture can greatly enhance the sense of belonging of international students, and help them to understand the Chinese culture in depth (Yang, Y. 2011). Through practice, international students studying in China can perceive and understand China, improve their understanding of China and deepen their understanding of China in the practice of national education, and then share what they have seen, heard, felt, and thought in the practice of national education with others, telling the story of China to foreign audiences and increasing the world's understanding of China. (Liu, W., & Zhang, J. 2025)

3.1.4 T (Technology)

The bubble of bike-sharing burst in 2018, and the number of new bike-sharing companies decreased sharply, while the cancellation of companies showed an increase. After a series of reorganisation and integration, Hello Bike, Meituan Bike and Qingju Bike have become the new industry leaders, forming a three-legged oligopoly (Hu, M. 2021). The bike-sharing industry is capital-intensive and the industry penetration rate is already high, so a stable competitive pattern has been formed. As user growth slows down, service upgrade will be the key to retain platform users.

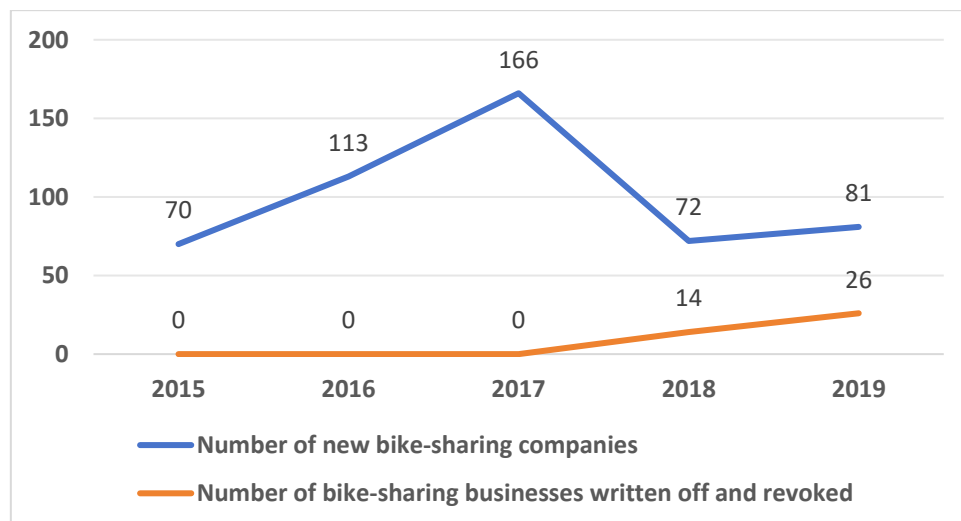


Figure 2: Number of new and cancelled bike-sharing businesses, 2015-2019
Service upgrades include the following:

Enhance the accuracy of positioning: With the help of high-precision navigation system to achieve accurate positioning, it is convenient for users to find the location of the vehicle and shorten the time for users to find the vehicle.

Establishment of a user credit system: regular assessment of user credit, fines or account freezes for users with serious credit failures to reduce irregular parking behaviour and damage to bicycles.

Enhance online complaint handling efficiency: Provide real-time customer service so that user complaints can be handled quickly and customer satisfaction can be enhanced.

Riding comfort: Strictly control the quality of each component of the bike to ensure safety while paying attention to ergonomics, adopting a soft and comfortable saddle, and introducing the automatic speed change technology, so that the vehicle can be more energy-saving when riding fast.

Manage customer relationship: collect customer information, provide personalised products and services by analysing customer needs and increase customer stickiness.

Enhancing service quality requires offline and online collaboration. On the one hand, standardised training for online customer service to improve the efficiency and quality of complaint handling; on the other hand, to strengthen the real-time feedback and monitoring of faulty vehicle problems, so that the offline maintenance personnel can carry out timely repairs to faulty vehicles. At present, the domestic customer service training system has been quite perfect, the formation of a standardised training system, customer service on the computer can complete all the work. Bicycle parts and components industry for safety, comfort requirements are further improved, which can further improve the comfort of the user riding. In terms of software, the development of domestic enterprises for the positioning system, monitoring system, etc. has been quite mature, for example, Hello operation and maintenance personnel use intelligent operation and maintenance BOS system to effectively monitor the status of bicycle maintenance, timely maintenance of faulty vehicles.

3.2 Industry background: SWOT analysis

Both the bike-sharing market and the international student service market have large development space and potential, and our platform combines both to create a new service model and business value.

The bike-sharing business made its debut in 2015, and from the outset it was more focused on rapidly increasing urban penetration and user usage through high subsidies, and was not very concerned about developing a sustainable business model. Since Mobike, Xiaohuangche, and others began promoting shared bicycles, there has been an explosive growth in shared bicycles. Many companies blindly follow the trend, ignoring the market's bicycle capacity, which has caused a series of problems (Meng, Y. 2019). As a result, the bike-sharing industry pressed the pause button in 2018 and went through a series of consolidation and reorganisation. Subsequently, Hello Bike, Meituan Bike (previously Mobay Bike) and Qingju Bike, supported by Ant Gold Service/Alibaba, Meituan Dianping and DDT, respectively, became the new industry leaders, forming a three-legged oligopoly, and the market gradually matured.

3.2.1 S (Strength)

Innovative: Combining bike-sharing and the international student service market, providing personalised services for international students, themed cycling routes, and cross-cultural exchange services in the form of "cycling + cultural communication".

Targeted: We investigated the problems faced by international students when using shared bikes, focusing on the international student population, their difficulties in integrating into the local community, and providing targeted solutions.

Diversity: independent exploration of cycling routes based on the city's historical attractions, cultural neighbourhoods and landmarks, and constantly and dynamically adding cycling routes over time to

maximise the exploration of international students' needs and the development of a diverse range of cycling routes.

Continuity: From user registration, riding process, online communication, activity organisation to problem feedback, the whole process is covered to continuously improve the quality of service, and to practically solve the problems of international students and help them to understand the local culture so as to better integrate.

3.2.2 W (Weakness)

At the initial stage of the platform, the project members are mainly university students with limited social and practical experience, and still need to improve and upgrade the personalised service solutions for international students and the maintenance of the platform.

The market is mature, and the cost of expanding the market in the early stage is large: at present, the domestic bicycle-sharing market is gradually maturing, forming an oligopoly situation in which Hello Bicycle, Meituan Bicycle (previously Mobay Bicycle) and Qingju Bicycle are the three dominant players, and a large amount of funding is required to enter the market in the early stage to increase the market share. (Zhang, H., Zhang, X., & Wang, J. 2021)

Diversified cycling routes still need to be continued to be explored: platforms need to develop diversified cycling routes based on the individual needs of users, which requires continuous exploration of new routes and keeping them dynamically updated.

3.2.3 O (Opportunities)

Large market size: according to Statista Market Insights data, overall, China's bike-sharing market size grew from 13.03 billion yuan in 2017 to 30.4 billion yuan in 2022, China's bike-sharing market size is growing steadily, and is expected to grow at a compound annual growth rate of up to 10% from 2023-2027, from 34.68 billion yuan to 50.75 billion; the user scale is expected to exceed 500 million in 2024 under the gradual climb of penetration rate.

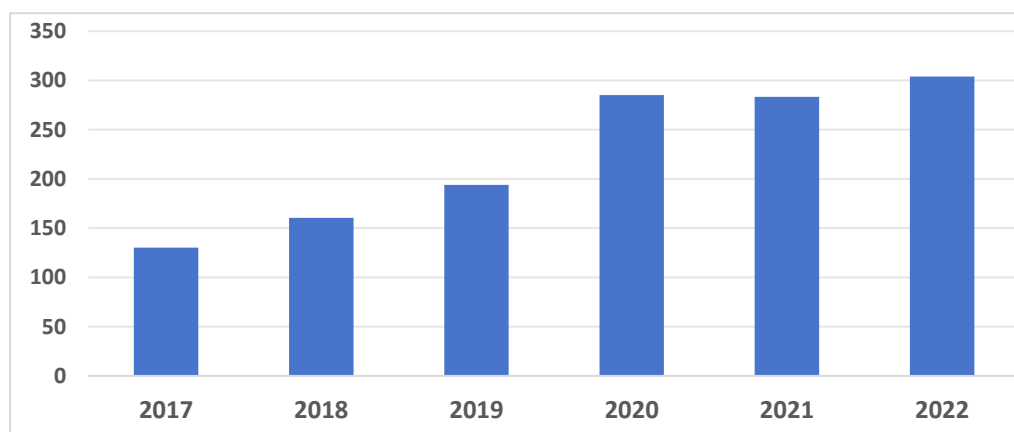


Figure 3: China's Bike-Sharing Market Size, 2017-2022 (RMB Billion)

Novel perspective and clear goal: Currently, all kinds of bike-sharing brands on the market mainly compete with each other in terms of riding convenience, comfort and service level, but do not provide themed riding routes, online communication platforms and personalised services for international students. Therefore, we focus on international students, pay attention to their personalised needs, independently explore themed cycling routes, build a platform for youth exchange, help them gain a deeper understanding of Chinese culture, and promote their adaptation and integration into the local culture.

3.2.4 T (Threat)

Threat of new entrants: Due to the low threshold of the industry, it is easier for new entrants to join, which will lead to the reduction of market share and intensified market competition. In the process of project construction, as riding routes and platform construction are easier to replicate, new entrants are prone to imitate. This is both a challenge and a motivation for us to continuously improve our service level and innovation ability. This requires us to have a keen insight into the changes in customer demand and the ability to maintain dynamic innovation.

Existing Competitor Threat: There are already brands with a certain scale and market share in the bike-sharing market, which is a threat to the development of the project team.

With the above SWOT analysis, the team faces many opportunities and challenges to make the project possible. Although, this project is promising and innovative, there are still threats from new entrants and already existing competitors. Therefore, it is necessary to formulate a correct business strategy, actively respond to and resolve difficulties and challenges, and continuously improve the level of service, so as to truly contribute to the adaptation of international students to the local culture.

3.3 Market analysis

3.3.1 The number of international students coming to China is increasing

With the increasing number of international students worldwide and the growing demand for cultural experiences and exchanges, our platform offers customised cultural exploration and exchange services with a broad market outlook.

In 2013, the number of students coming to China was 356,000, and has shown an increasing trend since then, reaching 492,000 in 2018, a year-on-year increase of 38.2 per cent.

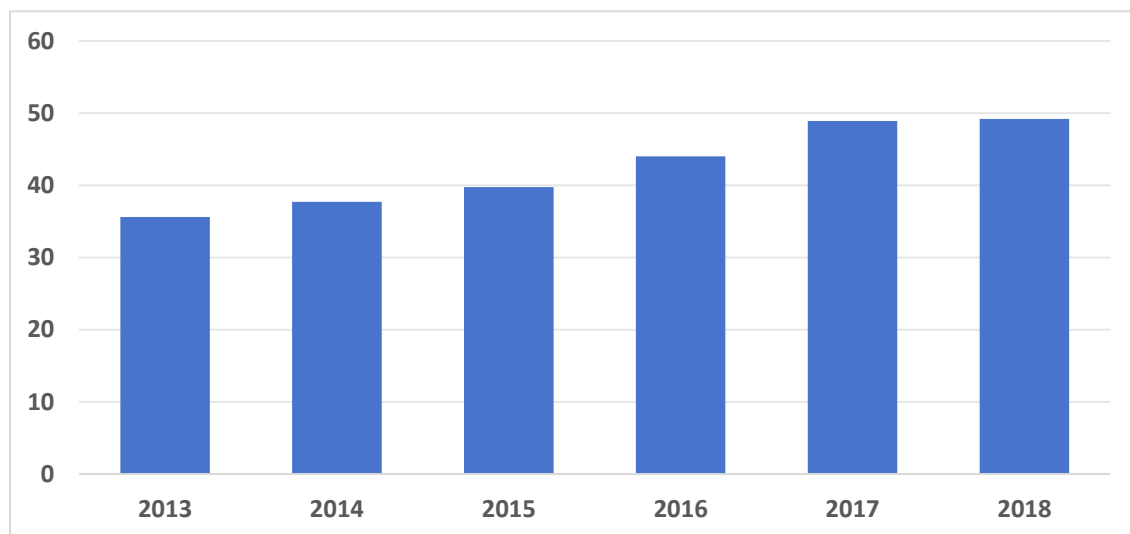


Figure 4: Number of students coming to China to study, 2013-2018 (in 10 thousand)

3.3.2 Small programs have become the largest traffic entrance to the bike-sharing industry

According to statistics, in June 2019, only 38% of the shared bicycle orders of the three head brands of the shared bicycle market, Meituan, Hello and Qingju, came from the independent APP terminal, and 62% of the orders came from the small programme channel. The small programme has become the largest traffic entrance in the bike-sharing industry. In July 2019, Hello Travel simultaneously occupied the first position in the scale of active users on the independent APP side and the small programme side of the bike-sharing market, with a user scale of 19.719 million and 41.621 million respectively. (Li, W. 2020)

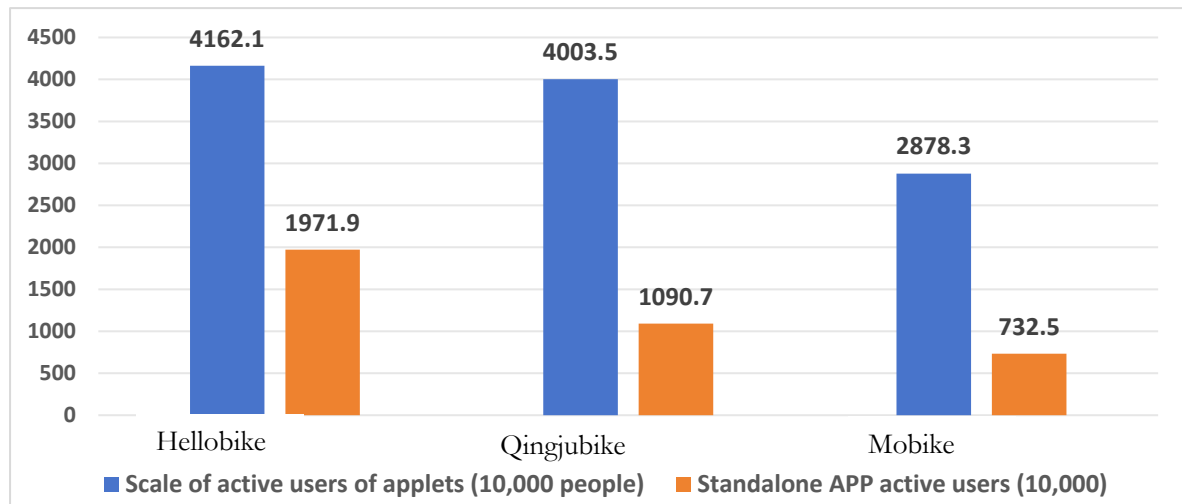


Figure 5: Bike sharing active user size by channel, July 2019

3.4 Target customers

This product is mainly aimed at the international student group in Beijing, providing cultural exploration and exchange services to meet their needs for cultural experience and exchange, which is also a major feature of this product. By exploring cycling routes with specific cultural themes, international students can enjoy cycling while deepening their understanding of Chinese culture, which helps them better understand Chinese culture and thus integrate into the local community; at the same time, it builds a cultural exchange platform for international students and realises mutual understanding between Chinese and foreign cultures, which is conducive to telling a good story about China and spreading Chinese culture. In this process, it promotes the construction of group identity and group relationships among international students studying in China, gradually dissolving their rejection of heterogeneous cultures, correctly understanding China, deepening their good emotions towards Chinese friends, and laying the foundation for the recognition of Chinese culture. (Cai, L. 2025)

3.5 Competitor analysis

Currently there is no similar platform in the market to explore the culture of bike sharing, our product has a unique competitive advantage and market space.

According to the China Road Transportation Association, as of the end of March 2023, in the field of bike sharing, the number of bikes placed by three companies, namely Meituan, Hello and Qinglang, still accounted for more than 95% of the national market. Each of the three brands has its own advantages, which are reflected in the following aspects:

Big data platform: Hello Bike has developed the "Hubble" data system to facilitate intelligent scheduling. Relying on "DDT Brain", Qinglang Bicycle carries out real-time management on the area and number of bicycles placed. Through refined operation, the efficiency of Qinglang Bicycle in clearing the vehicle accumulation in Fuzhou has increased by 50%.

Credit system: Hello has reduced the damage rate of the platform's bikes by 35 per cent by adopting price increases or account freezes for users with serious credit failures.

Government-enterprise co-operation: Qinglang Bicycle has been actively docking with the competent authorities in Wuxi and other places on the data supervision platform, cooperating with the government platform to achieve the bicycle management goals of total bicycle control and orderly parking.

Picture recognition technology: In response to the problem of the low rate of real faults in online fault repair information, Mobike uses picture recognition technology to judge the accuracy of the repair information.

Online and offline synergy: Qingkang Bicycle adopts a dual approach of online repair reporting and offline inspection teams, covering 15% of the platform's vehicles on a daily basis.

Cultural Exploration Platform: xx combines bike-sharing with cultural experience for international students, allowing international student users to explore the city's culture through specific riding routes, promoting the dissemination of Chinese culture and Chinese-foreign cultural exchanges.

Table 3: Comparison of the advantages of each bike-sharing brand

Brand Name	Big Data Platform	Credit System	Government-Enterprise Co-operation	Image Recognition Technology	Online-Offline Synergy	Cultural Discovery Platform
Hellobike	√	√				
Qingju Bike	√		√		√	
Mobike				√		
XX	√	√	√	√	√	√

4. Solutions

4.1 Introduction to the Platform's products and services

Sweeping code to share a bike function: users can conveniently sweep the code to rent a nearby shared bike when needed through the applet. This function enables international students to enjoy riding conveniently anytime and anywhere without worrying about the storage and management of bicycles.

Multi-language support: In order to meet the needs of international students from different countries, the applet provides a variety of language options, including English, Chinese and other commonly used languages, to ensure that users can easily use the platform in their own familiar language environment.

Themed cycling routes recommendation: the platform recommends cycling routes with different themes according to users' interests and preferences, such as historical and cultural tours, natural scenery exploration, food tours, etc., to help international students better understand and experience local cultures and landscapes.

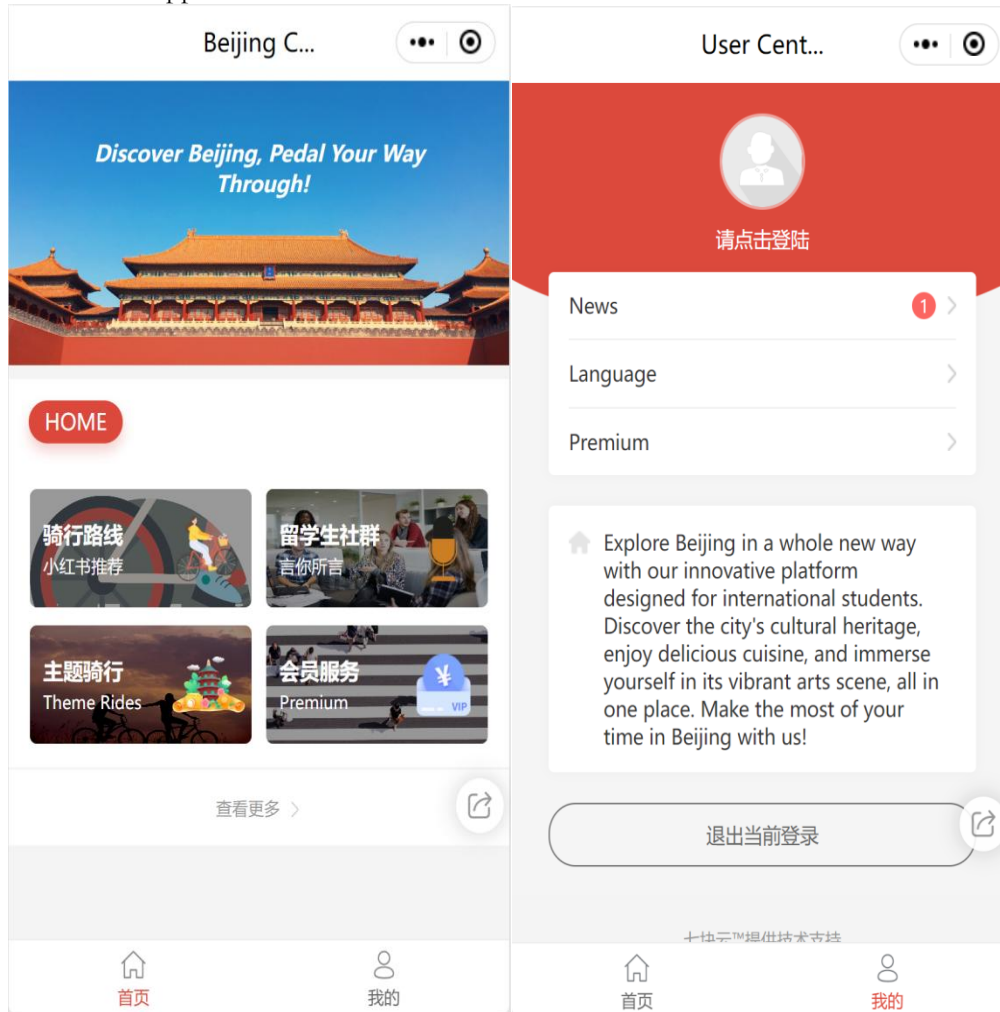
International student community exchange: the applet has an international student community exchange function, which allows users to share riding tips and exchange travel experiences with other international students on the platform, as well as organise riding activities or participate in activities organised by other international students to promote exchanges and interactions between communities.

Member service: The platform provides member service, which allows members to enjoy more exclusive benefits and privileges, such as unlocking more unique riding routes, priority booking of riding activities, exclusive customer service, etc., to enhance user experience and satisfaction.

Customer service support: In order to ensure the user's experience, the platform provides round-the-clock customer service support. Users can contact the customer service team via online customer service, telephone or email to solve problems encountered in use or provide feedback.

All these functions together constitute the "International Students Bicycle Sharing Culture Exploration Platform", which provides an all-round, convenient and interesting platform for international students to explore culture and communicate with the community.

Below is the applet interface:



4.2 Innovative points

Customised services for international students: The platform was developed specifically for international students, providing multi-language support, themed cycling route recommendations and other features to better meet their needs. This kind of customised service for specific user groups is a notable innovation point of the project, enabling international students to integrate into local life more easily and happily, and at the same time promoting cross-cultural communication and understanding.

Community exchange and activity organisation: the platform not only provides a code-sweeping rental service for shared bikes, but also has a community exchange function for international students, where users can share riding tips and exchange travel experiences with other international students, and even organise and participate in cycling activities. This community exchange and activity organisation function provides a richer and more interesting social experience for international students, and also promotes interaction and communication among international students.

Themed cycling route recommendation: In addition to providing basic shared bike rental functions, the platform also recommends cycling routes with different themes based on users' interests and preferences, such as historical and cultural tours, natural scenery exploration, food tours and so on, to help international students better understand and experience local cultures and flavours. This personalised recommendation function provides users with a richer and more diverse cycling experience, increasing the attractiveness and competitiveness of the platform.

Membership services and exclusive customer service support: The platform provides membership services, and members can enjoy more exclusive benefits and privileges, such as unlocking more unique riding routes, priority booking of riding activities, and exclusive customer service, which enhances users' experience and satisfaction. Meanwhile, the platform also provides round-the-clock customer service support, so users can contact the customer service team at any time to solve problems encountered in use, which guarantees the user experience.

Together, these innovations form the project's unique value proposition, making it stand out in the international student bike-sharing market and providing international students with an all-encompassing, convenient and fun platform for cultural exploration and community exchange.

4.3 Upstream and downstream cooperation

While developing their core business operations, companies need to continuously explore new businesses related to upstream and downstream processes as well as associated services. For shared bicycles, it is appropriate to moderately alter the deposit model, refine deposit items, develop ancillary products and services related to shared bicycles, expand more revenue streams, and develop more "sharing plus" products. (Zhang, Q., & Lin, J. 2021)

Co-operate with major bike-sharing companies to provide riding services to expand user coverage and increase user activity. International student groups can obtain cultural points through the applet after participating in themed cycling activities and cultural experiences. These points can be used to exchange for specific cultural experiences, coupons or for special products, thus increasing user participation and loyalty. International student groups can book shared bikes through our app and participate in themed cycling events and cultural experiences we organise. After participating in the activities, users can earn cultural points by completing the tasks of the activities. For example, 10 cultural points can be earned by completing a themed cycling activity and 20 cultural points can be earned by completing a cultural experience activity. These points can be exchanged on the platform for specific cultural experiences, coupons or for speciality goods, such as exchanging for a free cultural experience activity, obtaining a coupon or exchanging for speciality handicrafts. In this way, we encourage users to participate in cultural activities and exchanges, increasing user engagement and loyalty.

Cooperating with Xiaohongshu platform, we promote Beijing's cycling routes to Xiaohongshu platform to attract more international student users to know and experience. Through our app, international student users can easily browse the information of Beijing's cycling routes and jump to the Little Red Book platform for detailed information. On Xiaohongshu, we publish detailed descriptions of various themed cycling routes in Beijing, including route maps, attraction descriptions, historical and cultural backgrounds, etc., providing international student users with a comprehensive guide to cultural exploration. Users can also check out the latest and hottest cycling experiences and tips shared by other users on Xiaohongshu to learn more about cultural experiences and exchange information. Through our cooperation with the Xiaohongshu platform, we provide a convenient channel for international student users to explore culture and help them better understand and integrate into Beijing's culture.

Co-operate with branded merchants. Provide offers and discounts for users to increase user stickiness and engagement. We will open a cultural experience mall in the applet to provide users with a variety of goods and services related to local culture. Users can buy special handicrafts, cultural derivatives and book cultural experience activities in the mall to enrich their cultural experience and at the same time contribute to the development of the local cultural industry. Examples include speciality handicrafts, cultural derivatives, and cultural experience activities. Our partners include local handicraft shops, cultural and creative brands, and speciality restaurants. Users can purchase these goods and services through the applet platform to enrich their cultural experience and also contribute to the development of local cultural industry.

4.4 Profit model

4.4.1 Membership

We have introduced a membership system to allow users to enjoy more privileges and benefits of the platform and to enhance their experience and engagement. International students choose their own membership category that suits them according to their study time in Beijing: monthly, quarterly and annual. Membership privileges include but are not limited to:

Customised Beijing Riding Routes: Members can search and find the routes according to their own interests in the search box after jumping to the Xiaohongshu platform. You can also search for your own recommended routes about your own country's special buildings or food in Beijing.

Participate in all themed cycling activities and cultural experiences organised by the platform: Members can participate in all themed cycling activities and cultural experiences organised by the platform to experience local culture and history in depth. These activities include city history and culture exploration, traditional handicraft experience, cultural festival celebration, etc., covering a rich variety of cultural themes.

Obtaining Cultural Points: After participating in activities, members can obtain Cultural Points, which can be used to redeem specific cultural experiences, coupons or exchange for speciality goods. Cultural Points can be redeemed on the platform for various cultural experiences and speciality goods, such as free cultural experiences, coupons or speciality handicrafts.

Join the platform's international student community: Members can join the platform's international student community, where they can engage in cultural exchanges and discussions with other international students, and share their study abroad life and cultural experiences. The community provides a platform for mutual assistance and communication, allowing international students to better integrate into local life, expand their social circle, enrich their study abroad life, and realise true youth multicultural exchange.

4.4.2 Cultural Experience Mall

In order to further enrich the cultural experience of our users, we have opened a cultural experience mall on our applet platform to provide users with a wealth of goods and services related to local culture. In our mall, you can find a variety of special handicrafts, cultural derivatives, and various cultural experience activities.

Member users can freely access and purchase goods and services in our mall. Through our applet, you can easily browse a variety of cultural goods, including exquisite handicrafts, unique cultural derivatives and so on. You can also book various cultural experience activities and participate in local traditional craft experiences and cultural festivals to enrich your study abroad life and enhance your understanding and experience of local culture.

We receive a certain sales commission from the sale of goods and services as sales revenue. Through the sales revenue of the Cultural Experience Mall, we are able to continue to provide quality cultural products and services to our users, bring richer cultural experiences to our users and promote the development and prosperity of the local cultural industry. At the same time, the shopping consumption of users also indirectly supports the operation and development of our platform, which enables us to continuously improve and optimise the functions and services of the platform, and provide users with a better user experience and service experience.

4.4.3 Revenue from Advertising and Promotion

The main sources of profit for shared bicycles are rental fees, deposits, and advertising revenue, among others. Shared bicycles adopt a time-sharing rental model to charge a certain fee for providing cycling services; the company gains a flow of funds from the large number of user deposits; advertising mainly includes ads within the App and on the bodies of the bicycles. (Hou, L., Wang, F., & Cheng, Z. 2020)

In order to provide more quality services and rich cultural experiences, we will open up advertising spaces on the applet platform to provide advertising and promotion services to branded businesses. These advertising promotions will not affect the basic usage experience of ordinary users, who will still be able to use the basic functions of the applets 100%, such as viewing recommended routes and participating in cultural experience activities.

Brand exposure and sales conversion, brand merchants can place adverts on our platform to show their products and services to users, increasing brand exposure and sales conversion. Through advertising and promotion on our platform, brand merchants can accurately display their products and services to potential users, increase users' understanding and willingness to buy, and enhance brand awareness and market influence. However, we will only provide advertising space that is in line with our applet concept and recommend services or goods that are suitable for international students in Beijing.

We will charge according to the exposure and click volume of the advertisement space, which will bring effective advertising results for brand merchants. Our flexible charging model allows us to develop different advertising solutions according to the needs and budgets of brand merchants, ensuring that they can get the best advertising results and returns. Through advertising revenue, we are able to continuously improve and optimise the functions and services of the platform, provide users with a richer and better quality cultural experience, and promote the development and prosperity of the local cultural industry.

The essence of business activities is to make profits, achieving the earning of profits through the sale of products or the provision of services. The profit model is the main factor in the design of a business model. When a company constructs its business model, the services or products provided based on its own resources and capabilities should inherently have a profit point. This is the business model design that aligns with commercial logic.(Lin, S. 2021)

5. Conclusion

Against the background of accelerating globalisation, the number of international students has increased significantly, but they still face many challenges in integrating into the local culture and society. Based on this, this study innovatively develops the "Shared Bicycle Cultural Exploration Platform for International Students", which aims to help international students better understand and experience the local culture by providing them with a convenient means of transport and rich cultural exploration resources.

The platform not only optimises user experience through multi-language support and simple and friendly interface design, reduces advertisement interference and improves operational convenience, but also guides international students to explore local history, culture and social values in depth through intelligent route planning and themed cycling activities to meet their diverse needs. This innovative service model not only solves the language and operation barriers for international students in the process of using shared bikes, but also provides them with a platform for cross-cultural communication and learning.

Overall, the International Student Bicycle Sharing and Cultural Exploration Platform has not only achieved remarkable results in enhancing the travelling experience of international students, but also played a positive role in promoting Chinese and foreign cultural exchange and integration. Through this new service model, we have not only promoted the market development of bike sharing, but also provided important support for international students to better integrate into the new environment. In the future, we will continue to optimise and expand the functions of the platform, and dedicate ourselves to providing international students around the world with even better and more diversified services, helping them achieve even greater success in their new study and living environments.

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