Design and Implementation of Booth Supply System Based on Internet Plus.

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Abstract: With the arrival of the Internet Plus era, the traditional vendor market management mode is facing severe challenges. The purpose of this paper is to propose an innovative management mode through the design and implementation of a stall supply system based on the Internet to solve the problems existing in vendor market management and better promote economic development and social stability. This paper first analyzes the characteristics and challenges of the vendor market in the Internet Plus era. Then, based on the idea of Internet Plus, we propose a design scheme for the vendor supply system, including system architecture, functional modules, and key technologies. In the following section, we elaborate on the implementation steps of the system, including system requirements analysis, database design, and system development. Finally, we verified the feasibility and effectiveness of the system through an actual case study and performed a comprehensive evaluation and in-depth analysis of the operation of the system. The research results show that the vendor supply system based on the Internet can realize the distributed management of the vendor market and optimize the allocation of resources, improve the efficiency and competitiveness of the market, and provide a reference for the development of the traditional vendor market.

Keywords: Internet plus, vendor market, supply system, design and implementation, optimal allocation of resources.

1. Introduction

1.1. Research background and research value

With economic development and the advancement of urbanization, mobile vendors have also begun to enter cities, changing people's lifestyles and social order to some extent. In Western countries, especially the United States, mobile vendors have become a sensitive issue. From the perspective of China, due to the characteristics of a large population and vast territory and the long-standing "dual structure" in the process of urban and rural development, this special national condition has led to the characteristics of large numbers, wide distribution, and large-scale mobile vendors in cities (according to the Survey Report of Mobile Vendors in China). At the same time, owing to the large population and scattered residence, this group has become the focus of urban public health and environmental protection. Therefore, the concept of "city vendor" is a social and economic phenomenon that comes into being and develops with the industrial revolution, large machine production and commodity exchange. It has changed people's lifestyles and social order to some extent, and has even changed the power structure of the whole country. Therefore, from a theoretical point of view, urban vendors are an economic and social phenomenon; from a political point of view, urban street vendors are also a spatial political phenomenon; from a cultural point of view, urbanization and "mobility" are also a pair of basic attributes.

In this study, the "vendor" is defined as an individual or collective that forms an interest exchange relationship between the local government and the vendor based on mobile management in the city and seeks the power relationship with the local government. The street vendor group is a relatively independent social group, special social group, and vulnerable social group with certain universality in China. However, it is different from ordinary urban residents to some extent: they do not have the so-called "citizen" status, but a gathering group based on mobile management and taking the market as the means in the city. The reason why street vendors appear in the process of accelerating urbanization and improving people's living standards in China is because they need to survive in cities like other citizens, and their living conditions are subject to multiple management and control by self-employed ("mobile vendors"), street offices, urban management departments, local governments and other administrative organs. However, fundamentally speaking, a street vendor is not an "individual/collective" in a pure sense, but a "space politics" (from the perspective of space politics theory, a city is a specific scale unit formed by the aggregation of different dimensional space forms. Therefore, the boundaries of urban governance should be "governance in space" and "governance space"). This kind of "space politics" not only affects a kind of interest exchange relationship between individuals/collectives, local governments and other administrative organs, but also forms a kind of power relationship to a certain extent, and also affects other social members-including urban residents who live and survive together in the inner city by street vendors. Therefore, under the development trend of urban-rural integration, it is particularly important to study the socio-economic roots and spatial governance of urban street vendors, which play an important role in promoting the modernization of the national governance system and governance capacity.

2. The Main Problems of Urban Mobile Vendors' Booths

Thanks to government support, urban mobile vendors have obtained short-term legal status and are allowed to continue to exist within the scope approved by the government. Although the stall economy has made progress in some aspects, there are still many problems that need to be solved urgently. For example, occupying public spaces, polluting the
environment, affecting public order, difficult supervision, and environmental safety are still key factors restricting its development in the current period of epidemic prevention and control. Against the background of the Internet in the new era, this paper proposes a new stall management model in view of the problems existing in the current situation of urban mobile vendors' stalls. The following main problems exist in stalls of mobile vendors in cities:

2.1. Vendor booth location choice

With the continuous promotion of national policies, mobile vendors have obtained a legal status with strong support from the government. According to different policies in various places, many legally operated stalls have emerged in cities, effectively reducing the business methods of setting up stalls in streets and lanes. However, there are still many mobile stalls in crowded places such as pedestrian streets, shopping malls, and large squares. The choice of street vendors in these cities has a certain impact on the appearance of the city and has brought many adverse consequences. Although the government has stipulated the fixed location of stalls, there is still the problem of the disorderly management of mobile vendors in cities.

2.2. Rent of legal booths

Mobile vendors must set up stalls in areas specified by the government and pay rents every month. Many mobile vendors choose to find stalls outside the government planning area because they cannot afford the high rent, but there is no guarantee that their investment will lose money. At the same time, owing to the difference in rent and the time allowed to set up stalls, there are also differences in locations. For example, night market stalls can only be rented at night for operation. However, in cities and other places, it is stipulated that they can only be operated during the day on a specific date. Because the number of legal stalls is limited, it cannot meet the needs of all vendors; therefore, vendors can only choose the location of their stalls at will, which brings greater challenges to urban management.

2.3. City vendors choose booths at will.

During the city gathering, many mobile vendors arrive at the scene in advance to compete for positions, which leads to conflicts among vendors. Simultaneously, the booth location size was not specified. Therefore, later vendors will choose to set up stalls in more dangerous and crowded places after others occupy their positions. Doing so can easily lead to traffic congestion, increase security risks, and even cause accidents.

2.4. Temporary selection of stall sales-unable to effectively manage.

There are many mobile vendors in the city, some of whom choose to temporarily set up stalls. These temporary stall owners rarely choose to rent legal stalls but prefer to find a temporary location outside the legal stalls to earn extra income. However, the location they choose will have an impact on traffic to a certain extent, which can easily cause congestion. Urban managers take different measures according to different urban policies when dealing with these people, which brings trouble to urban management.

2.5. Urban vendors operating environmental pollution problems.

When urban vendors operate, they often cause serious environmental pollution problems, such as noise, air, and domestic garbage pollution. Generally speaking, its business location is usually the transportation hub, crowded people, bustling business districts, and other areas in urban planning. However, environmental pollution caused by garbage, such as lampblack and discarded food residues, has brought great challenges to the management of urban sanitation. Due to the lack of unified rules within the region, the contradiction of land use space is intensified, which in turn leads to malicious competition and violent conflicts among operators, thus destroying social harmony. It is also easy to have a negative impact on the normal traffic order and traffic safety.

2.6. Particularity of identity of urban vendors

The process of urban modernization in China is rapid, and all kinds of resources are gathered in cities, which leads to a large rural population pouring into cities. However, cities cannot meet the employment needs of migrants in the process of development, the average educational background of these migrants is relatively low, and employment opportunities are limited. In addition, urban social security systems are constantly improving. Consequently, a large number of idle laborers have emerged in cities, which has contributed to the surge in the number of street vendors in cities. From this perspective, urban vendors have characteristics of long-term rationality and inevitability.

2.7. The spontaneity of urban vendors pursuing interests is strong.

To a certain extent, urban street vendors provide solutions to people's basic living needs, but at the same time, we cannot ignore the many negative consequences it brings. In urban vendors, food quality cannot be guaranteed because of a lack of business licenses. On the other hand, the rent of urban vendors is relatively low, and they do not even need to pay the booth fee; thus, their operating costs are relatively low. Therefore, because the price is relatively close to people, this product attracts a large number of urban consumers. This has undoubtedly caused a certain impacted physical shops and undermined the normal operation of the market operation order and the principle of fairness. Driven by the pursuit of financial interests, the holders of licenses will also join the army of urban vendors, thus forming a vicious circle that is unfavorable to the development of the market economy.

2.8. City vendors lack correct social awareness guidance.

Most city vendors lack social awareness, which leads them to leave a lot of rubbish when they leave their stalls. At the same time, urban vendors lack an understanding of urban managers' policy-making and even ignore it. This situation has led to the chaos of public order to a certain extent, and has led to the appearance of “dirty mess,” which has had a negative impact on the appearance of the city, traffic order, and environmental sanitation. From the perspective of vendors, they think that they have no other source of income and are among the vulnerable groups in society; therefore, they need to set up stalls to meet their basic needs. Although I know that my behavior is wrong, I have to stick to it to make a living.
2.9. Urban management law enforcement enthusiasm is low.

Urban managers—that is, urban management—have a wide range of responsibilities and coverage, and it is difficult to be impeccable. When violent conflicts occur, whether in online media or public opinion, people tend to be biased towards the weak and hold biased views on urban management law enforcement. Because most citizens hold prejudices against urban management, urban management personnel are under great pressure in the process of law enforcement, which in turn affects their law enforcement work and quality. In addition, many law enforcement officers are temporary contract personnel, and their wages, benefits, and social security are not guaranteed, which has a serious negative impact on their work enthusiasm. At the same time, there are still some officials who are lazy about their work and face supervision and inspection by superiors.

3. The Current Situation of Stall Economy Under the Background of Internet Era

The street stall economy has a cultural history of thousands of years, and each era has its own shadow and plays different roles. Although it has stagnated for some reason, this culture has long been embedded in the social market economy and has become inseparable. In particular, under the influence of the COVID-19 epidemic, the state has adopted a healthier management model to regulate the stall economy, making its development healthier and prosperous.

(1) The traders who spread the economy include talents from all walks of life. This big business activity embraces people from all walks of life, whether farmers, laid-off workers, or unemployed college students, which can not only solve work problems, reduce unemployment rates, ease economic pressure, maintain a basic life, and ensure social stability. Second, compared to the previous stall economy, these traders are highly educated and stick to a certain moral bottom line to contribute to the prosperity of the stall economy.

(2) and can meet the consumption needs of different consumers at different levels. The street stall economy has become a fashion, a way of exporting foreign culture, not just a tool to make money. Nowadays, the stall economy is not only about food, clothing, housing, and transportation, but also about various cultures, which contain a strong local culture and show the local cultural heritage.

(3), there is no unified plan for a stall economy. There is a lack of standardization in the management of vendors, which leads to an inability to effectively confirm the identity and supply channels of vendors. Supervision, managers' scraping ability, and quality must be improved. In the process of law enforcement, we should not take violent law enforcement but choose a gentle way to enforce the law, which can effectively reduce the tension between managers and vendors.

(4), due to the lack of technological innovation, the city has formed an incomplete system, which has led to ... most people's inherent image of street stalls remains at a messy and unskilled level. Although the development of the street stall economy is far better than before, for the sake of long-term development, the street stall economy needs the joint efforts of society to move forward in Qi Xin.

4. Innovative Practice of Stall Economic Development Under the Background of Internet Era

The street stall economy has long been different from the past, especially after the economic crisis, which has made great contributions to the economic recovery and revitality of the city. However, there are still many shortcomings in the street stall economy, which require continuous efforts to reform and innovate to make it glow with a better future.

4.1. Breaks the stereotype.

The street stall economy is a controversial economic form. In recent years, it has been recognized by many people and environmental sanitation has greatly improved. In particular, night markets with local characteristics have been loved by young people. Especially after work, after a day's fatigue, one can go into life and listen to other voices in the world, which has nothing to do with work, eat local characteristics, and feel the smell of fireworks. The street stall economy is not static. We should keep up with the rhythm of the times, grasp the changing laws of the market, develop strengths and avoid weaknesses, show the positive side to the public, spread an excellent street stall culture, break people's inherent ideas about it, break through the status quo, and create new ways of thinking.

The characteristics of stall economy are low threshold, low cost, low risk, and sufficient time. Today's stall economy is not only aimed at working people, but people at all levels of society can participate, which can quickly absorb a large number of employed people and improve their overall income level. During the economic crisis, employment pressure in various industries was very high. However, it is very limited for college students to apply for jobs, but they want to use their holidays to acquire knowledge. At this moment, it is a very good idea to set up stalls, not only to cultivate their practical ability and eloquence but also to learn to interact with others and get in touch with society through these practical activities.

Second, college students can also learn about the "stall economic support plan, single spark assistance plan, night market partner support plan, and comprehensive small shop fireworks incentive plan” according to Internet companies such as Ali, JD.COM, Suning, and Tencent. In my spare time, I will design the online small program of stall bar with what I have learned in winter and summer vacations, which provides a channel for the standardized management of offline stall economy, quickly injects new vitality and vitality into the economic development of urban stands, and plays an important role in increasing employment and economic growth and expanding consumer demand. This not only improves people's overall income level, but also strengthens people's consumption beliefs and makes great contributions to the stable development of society.

4.2. Management model innovation

The traditional economic management mode of stalls is guerrilla warfare between urban management and vendors. When the chengguan comes, I will hide, the chengguan is left, and I set it up again. On the surface, it is the responsibility of urban management or economic subjects, but in fact, the problem of social and economic management systems not only leads to a deepening contradiction between the two sides, but is also not conducive to the harmonious development of
The stall economy differs from that of other social and economic subjects. It is characterized by large liquidity and easy realization; therefore, its management mode should also be special. However, this cannot be fixed using traditional rules. It should be managed in a manner that conforms to its characteristics, improves the management level and quality of relevant managers, breaks the traditional management mode, and makes the stall economy more prosperous.

The essence of a stall economy is to provide convenience, save time and cost, and promote the growth of the regional economy. However, guerrilla warfare in the past was not conducive to development, and managers and vendors could live in harmony. As long as both sides abide by the rules, innovative management is the best solution. Vendors will make concessions for buyers to sell goods, but at the same time, they must pay attention to safety and environmental sanitation, so they should start from the source and solve the problem. Vendors put goods in accordance with the regulations, clean up the garbage in time after collecting the stalls, and managers carefully supervise and regulate their behavior in time so that there will be no contradiction between the two sides, which will be conducive to the stable development of society. Especially near the school, both sides should abide by rules. Most vendors sell their food. The food safety of student groups must be strictly guarded and they must not be lucky. Once problems arise, they must be punished severely. For the development of a stall economy, it is arduous not only to rely on the power of regulators but also on the masses in society. We should not only supervise others but also be strict with ourselves.

4.3. Selling places to innovate.

The traditional stall economy remains offline, which is not conducive to its development of stall economy. First, the economic places were limited. Generally, the places chosen are mainly places with large traffic; second, they have certain consumption power, and finally, they are controlled by time, among which there are many problems. Therefore, the reform and innovation of the stall economy can start from where it is sold. In this Internet age, the stall economy has gradually transformed to online, and has become an indispensable part. However, it is not only limited by space and time, but also has more development prospects. For example, the current related platforms such as "orange heart optimization" and "buying more vegetables" have broken through traditional stall economic development. People can choose their favorite products to place orders anytime and anywhere through their mobile phones, and then the products will be delivered to sellers through the platform. Both parties can save time and cost, and the prices are open and transparent; therefore, there is no such thing as being cheated if they do not bargain. Therefore, it is the only way to change and break through the original selling mode and implement the online shopping mode program through the Internet platform, and all kinds of specific measures needed in it need to be explored continuously.

Cities are a facade of foreign cultural exports, and not every place is suitable for spreading the economy. In the past, it was necessary to plan and arrange selling places. The Spring Festival is a traditional festival that Chinese people look forward to and are full of life. It can plan relevant places humanely, set time to facilitate vendors to set up stalls, alleviate economic problems, add fireworks to the development of cities, and highlight the humanization and adjustment of China's management planning.

With the continuous progress of the times, selling places have already undergone earth-shaking changes. After the rise of the stall economy, people's ideas have become increasingly interesting. In their spare time, they can not only make money but also add fun. Kunming 'scitizens drive private cars to set up stalls in the park, and opening the trunk is a stall. Its unique stall has instantly become the focus of attention and research. Thus, this method is worth popularizing. As long as you abide by the regulations and use your spare time to set up stalls, you can increase your income. What is wrong with doing so?

4.4. Into the local characteristics of cultural color.

Every city in our country has a different cultural history and traditional characteristics, such as landmark buildings and famous specialties, which are symbols of a city and have strong local characteristics. These elements are widely used in stall economies and are promoted worldwide. There are many kinds of goods in the stalls, all of which reflect local cultural characteristics. Sichuan Opera's face change is world-famous, and everyone is full of praise. The stall economy was like a postcard, spreading to the world and showing local customs.

5. Urban Vendor Platform Under the Internet

In today's era of rapid Internet development, it has penetrated every field of life. Many methods such as QR code applet, WeChat official account, and face payment have been widely used in daily life, providing us with many conveniences and new ideas for solving problems in life. Through the application of internet technology, we can create a new mode of operation for urban mobile vendors to ensure that their economic sources and living rights are fully protected.

Promote the progress of urban civilization. To effectively manage different types of urban vendors, we implemented classified management and formulated characteristic operation modes that are suitable for various types of urban vendors and urban managers. In this idea, I put forward the respective solutions for urban managers and vendors, and the specific contents are as follows:

We built a platform for urban vendors through the WeChat official account, which not only provided relevant information but also supervised urban mobile vendors. Currently, WeChat has been widely spread to every family, whether it is street vendors or elderly people in the city, and most people are closely connected to the Internet. They have a certain understanding of and experience in using mobile public platforms. Under the background of the WeChat real-name registration system, city managers can understand the situation of vendors in a timely manner and supervise and manage them.

The platform was designed to provide information to different groups of urban vendors. Consider Qingdao as an example. There are many large markets in Qingdao, such as the Licun Grand Collection and Beiqu Grand Collection. The platform can integrate the information on these large episodes, including the date, booth location, rent, and other necessary information closely related to urban vendors. This information was compiled and published on the platform by
the city managers. At the same time, the large market is divided into different areas, and various types of urban vendors can choose suitable areas and make appointments according to their own needs; they also need to pay rent and other expenses. For the convenience of users who are not familiar with the use, we will set up a special area in a large concentration to provide them with booths so that they can easily earn income. Taking Beiqi Night Market as an example, the platform can divide the night market into multiple areas and display booths in the form of maps according to market planning. When renting booths, vendors can choose according to their needs and pay different rents. On this platform, not only can the responsibility be blamed on specific people, but urban management can also find the person responsible for the problem booth in time to ask. City managers can publish different policies of the night market through the platform so that city vendors can obtain the required information in time. To meet the needs of the elderly and temporary street vendors in the city, special areas can be designated in concentrated urban booths and opened to meet their needs. To ensure the normal operation of the platform, a system was developed for city managers to manage vendors in cities, and city managers can supervise the business activities of city vendors through mobile phone applications.

5.1. System introduction

By combining the GPS positioning technology with the eye-catching technology of public security organs, the intelligent supervision system of urban stalls has realized the functions of real-time positioning, electronic fences, and track playback to supervise the normal stall setting of merchants in a specified time and area. Once vendors are found to operate illegally, they can collect evidence by recording videos and convey relevant information to the urban management department in charge of the area. Through real-time monitoring and management of urban mobile vendors by urban management, the efficient supervision of urban mobile booths has been successfully realized, thus shaping a new image of an orderly and safe stall economy.

5.2. APP function

B. Real-time monitoring of the booth area is realized through integration with the eye-in-the-sky system of the public security organs. The system can be used for real-time monitoring in places with large urban traffic and can obtain the details of each booth area, including video recording and photo taking. In places with high urban traffic, GIS maps can be used to set up special urban vendor booths. These booths visually show the distribution and current location information of the booths in various regions. Click on real-time surveillance video. Quickly obtain vendors’ mobile information and provide real-time work data for inspection. C through electronic fences and intelligent monitoring technology, fixed areas can be customized and edited, thus realizing intelligent supervision. By applying intelligent monitoring technology, we can monitor the location of vendors in real time and allocate exclusive areas to each stall. Simultaneously, we can monitor the vehicles in the stalls in real time and trace the person in charge of each booth. At the same time, we should keep the evidence in time in case of an emergency to trace the scene of the incident. When city vendors appear in inappropriate places or at inappropriate times, the system automatically issues an early warning and uploads screenshots to urban management personnel in the area. Urban management personnel dealt with vendors. Through the computer software platform, APP management can upload photos of booth violations and notify urban management personnel while simultaneously controlling the operating time and area in real time. Once city managers receive information about illegal operations, they can respond quickly, accurately determine the area of responsibility, and arrange supervisors to guide them in time. Government agencies can achieve data sharing and collaborative work through this platform. It not only improves the governance efficiency of urban stalls but also significantly reduces the cost of human supervision, thus making the supervision of mobile stalls more humanized and intelligent.

6. Conclusion

Overall, the emergence and development of urban mobile vendors are closely related to the changes in “villages in cities” in the process of urbanization in China. Because there is a huge and complicated interest pattern in the process of urbanization in China, beyond the spatial phenomenon of urban stalls with special socioeconomic backgrounds and cultural characteristics, many problems are often formed under the influence of political forces, which are often the reasons why many social contradictions and conflicts are difficult for relevant departments in China to solve in the process of urban management. From the perspective of “space politics,” the relationship between vendors, vendors, and local governments is an individual/collective relationship. On the one hand, hawkers, as an important part of national social and economic development (such as self-employed), have a complicated power game relationship with local governments (that is, interest exchange and power competition); On the other hand, it is also a kind of “space politics” for local governments to strive for and safeguard their own interests in the process of urban development in order to seek their own development and local economic prosperity. In addition, urban vendors also have certain heterogeneity; there are obvious differences among urban vendors: some vendors have stable jobs and incomes, while others are engaged in various low-end laborers on the streets. There are many problems in the management of urban stalls, such as environmental pollution caused by mobile vendors, security risks, and traffic congestion. Urban vendors are social groups that require long-term governance and gradual improvement. But on the other hand, we should also see that these are all phenomena in the process of urban modernization and cannot be simply understood as "messy.” To effectively solve social problems and conflicts caused by the special spatial phenomenon of urban mobile vendors, it is necessary to establish a certain position and scope of rights enjoyed by mobile vendors in the process of urban management at the legal level.

This study examines the socioeconomic roots and spatial politics of urban vendors. While the vendor economy is booming, we should be alert to the fatal problems in the vendor economy: first, the flexible implementation of the national economic policy for vendors; second, violent law enforcement by government departments for vendors; and finally, the social governance problems caused by the vendor's operation. Focusing on improving people's satisfaction, we actively seek good management strategies, explore the economic transformation and upgrading of vendors, and aim to truly benefit the people and bring them a sense of gain and security. Therefore, according to various
relevant laws and policies, self-employed street vendors can be guided to facilitate citizens’ lives while alleviating the economic employment pressure of street vendors and meeting different levels of consumer demand. In accordance with the requirements of the state to comprehensively promote strict, standardized, fair, and civilized law enforcement, we explore how to make administrative law enforcement more temperature-oriented to achieve a combination of leniency and strictness and the integration of jurisprudence, which makes people convinced. We actively visit and seek the self-transformation of the vendor economy and propose a strategy for developing a community creative market, which not only beautifies the construction of community streets, but also makes the vendor economy truly become a beautiful landscape, improves the economic benefits of the city, and has a certain positive impact on urban construction and the cultural tourism industry. To be the first, put forward the grassroots self-government system of the floating population, ensure the people’s democracy in the whole process, ensure the improvement of the ideological quality of street vendors, cooperate with government management, and promote the construction of a prosperous, strong, democratic, civilized, harmonious, and beautiful socialist modern power.

The street stall economy, which is a marginal economy of the city, has a long history. As long as the city is continuously developing, it will survive in various ways, but it is also a double-edged sword. If used reasonably, it is a postcard for cities to show their strength to the outside world, which plays a good drainage role; however, if used improperly, it will have a serious impact on the appearance of the city. Therefore, we should make rational use of this economic model and create unique local characteristics. Against the background of the Internet era, the stall economy has become the mainstream to ease employment pressure and buffer the economic crisis. This demonstrates the importance of stall economy. Therefore, in the development of cities, each city should make full use of the benefits brought by the stall economy according to its own situation, reasonably guide employed people to pay attention to the safety and norms of related things, and make the economic development of cities coexist with fireworks.

References


