Academic Journal of Management and Social Sciences
ISSN: 2958-4396 | Vol. 2, No. 3, 2023

Research on Crowdsourcing Distribution Model of Community E-commerce Logistics Development

Chunli Li [1, 2]

[1] University of Perpetual Help System DALTA, Las Piñas Campus, Phillipines
[2] Guangdong Communication Polytechnic Guangzhou Guangdong, 510650, China

Abstract: This paper provides an overview of the concept and characteristics of community e-commerce logistics, crowdsourcing logistics, existing models and the current situation and problem analysis of community logistics development, analyzes the necessity and feasibility of developing crowdsourcing distribution model for community e-commerce logistics, designs a crowdsourcing distribution platform for community e-commerce logistics from the perspective of considering security, reliability and flexibility, and proposes measures such as information risk guarantee, quality risk guarantee, security risk guarantee, capital risk guarantee and legal risk guarantee, in order to provide reference and reference for the study of community e-commerce logistics crowdsourcing distribution model. It also proposes measures such as information risk protection, quality risk protection, security risk protection, capital risk protection and legal risk protection to provide reference and reference for the research on the crowdsourcing delivery model of community e-commerce logistics, with a view to promoting the development of community e-commerce logistics delivery and improving the competitiveness of community e-commerce logistics.

Keywords: Community Logistics; Crowdsourced Delivery Model; Platform Design.

1. Introduction

With the rapid development of community e-commerce, community e-commerce logistics has become an important part of the e-commerce industry. The traditional logistics and distribution model is difficult to meet the rapid development needs of community e-commerce due to problems such as high cost, low efficiency and narrow service scope. Therefore, in order to improve the efficiency and service quality of community e-commerce logistics and distribution, it has become necessary to seek a logistics and distribution model that is more suitable for the needs of community e-commerce. As a new type of logistics and distribution model, crowdsourcing distribution has the characteristics of flexibility, high efficiency and low cost, and has broad application prospects in community e-commerce logistics and distribution.

2. Community Logistics and Crowdsourcing Model Research

2.1. Community Logistics

With the rapid economic development and the popularity of e-commerce, the total amount of community logistics in China's cities is growing, and community logistics is the end of the logistics supply chain. Chen (2008) believes that community logistics refers to a logistics model based on the community or surrounding areas, providing express and logistics services for community residents or businesses in the community [1] . It has gradually emerged in the process of urbanization and communityization, becoming an important force in promoting the quality of life of urban residents and urban economic development.

2.1.1. Community Logistics Characteristics

This paper will explore the characteristics of community logistics at three levels: the customer, the product object and the distribution chain.

(1) The customer base is scattered.

A distinctive feature of community logistics is the dispersed distribution of the customer base. As the service targets of community logistics are community residents and businesses, and the distribution of community residents and businesses is usually scattered, this also means that to meet the needs of these customers, community logistics needs to establish an efficient logistics network to ensure service coverage and timeliness, but this will also inevitably increase logistics costs. This makes community logistics companies face many challenges.

(2) Product objects are time-sensitive.

With the improvement of consumers' living standards and the popularity of online consumption, fresh products have become an integral part of the e-commerce platform. However, the timeliness of fresh products is very demanding and must be delivered to customers within a specified time frame, otherwise the quality and taste of the products will be seriously affected. As a result, logistics companies must face the challenges of time, distance and environment when delivering fresh products. In the actual delivery process, customers are not always at home waiting for logistics, so last-mile delivery becomes an important factor affecting the efficiency of fresh produce delivery. In this context, community logistics needs to introduce new technologies and delivery models to improve delivery efficiency and meet consumer demand.

(3) The complexity of the distribution chain.

The complexity of the community logistics distribution chain is mainly reflected in the following aspects:

One is the complexity of the delivery route. The main target of community logistics delivery is the community or the residents near the community, and the roads in these communities and residential areas are usually complicated, and there are even some small roads and detours. This makes it necessary for the delivery staff to spend more time and effort to plan the routes and ensure that the goods can be

delivered accurately to their destinations.

Secondly, delivery times are not fixed. Community logistics delivery times are usually not fixed because customers' collection times vary. At different times of the day, the deliverers need to deliver according to the needs of the customers, which creates a great deal of uncertainty in the work of the deliverers.

Thirdly, delivery needs are different. The customer base of community logistics delivery is relatively wide and their delivery needs are also different. Some customers need urgent delivery, some need regular delivery, and some need different services such as cash on delivery. The variability of these needs makes the process of community logistics delivery more complex.

Fourth, distribution points are concentrated. Compared to urban logistics distribution, the number of distribution points in community logistics distribution is much smaller, but these distribution points are often densely concentrated, resulting in a waste of time and efficiency during busy distribution periods when distributors need to run back and forth between these points.

2.1.2. Existing Distribution Models in Community Logistics

Table 1. Advantages and Disadvantages of Community Logistics Distribution Model

Distribution mode	Advantages	Disadvantages
Home delivery mode	Easy inspection of goods by the customer, extensive coverage and clear responsibility.	A large number of staff are required, which is costly, and there is a serious shortage of staff during important shopping periods, especially during shopping periods such as "Double 11", when the probability of secondary delivery is relatively high.
Commissioning point collection service model	A greater solution to the problem of inconvenient receipt by users.	Restricted by business hours, prone to lost and mis-claimed parcels and the difficulty of recourse
Locker model	With all-weather standby features, it is relatively convenient for customers to pick up their goods without time constraints and it protects their privacy.	There is usually a distance between the user and the locker, and the locker itself has limited space, so in most cases only small items can exist, and large items cannot be stored; there is no personnel to look after them, and theft is likely to occur.

Community logistics is characterised by large volume, dispersion and wide coverage, so its distribution costs account for a high proportion of the overall distribution, usually about one-third, so how to effectively reduce community logistics costs and improve the efficiency of distribution is the core concern of enterprises, who occupy the advantage in this link, who will grasp more customer resources and achieve more profits [2] . In the community logistics distribution has a variety of models, including lockers, entrusted points, home delivery three main models. The advantages and disadvantages of the three models can be compared through the Table 1.

A comparative analysis of the three distribution models shows that community logistics currently suffers from difficulties in cost and revenue control, safety and security of goods, unclear delineation of responsibilities and difficulties in recourse, so it is necessary to combine the existing community logistics models and the advantages and disadvantages of the different models to optimise them.

2.2. Crowdsourcing Logistics

Crowdsourcing logistics refers to the outsourcing of logistics and distribution tasks to the public in the society, through an online platform to achieve a logistics and distribution model [3]. Unlike traditional logistics and distribution models, crowdsourced logistics does not rely on professional logistics companies or distributors, but rather posts distribution tasks through an internet platform, with individuals or small logistics companies in the community completing the distribution tasks. Crowdsourcing logistics can not only improve the efficiency of logistics and distribution, reduce logistics costs, but also create more jobs and promote economic development.

2.2.1. Characteristics of Crowdsourced Logistics

Crowd-sourced logistics has outstanding advantages in regional distribution and same-city distribution, mainly in the following ways:

One, flexibility, the flexibility of crowdsourcing logistics is mainly reflected in the wide range of services, flexible delivery times, diverse delivery routes and diverse delivery personnel, etc. Crowdsourcing logistics has a wide range of services, which can cover urban, rural and remote areas to meet the needs of different customers. Flexible delivery times, which can be adjusted according to order volumes and customer requirements, improve service efficiency and quality. The distribution routes are diverse, and the most suitable delivery method can be selected by walking, bicycle, motorbike and car. Distribution staff come from different backgrounds and industries, such as students, freelancers and retirees, making full use of social resources. By sharing resources, such as vehicles, warehouses, equipment, etc., costs are shared and reduced, improving efficiency and competitiveness.

Secondly, the cost is relatively low and the effective integration of resources is achieved. In crowdsourced logistics, delivery personnel are able to freely choose their delivery orders according to their own circumstances, and they are also able to mobilise their enthusiasm and reduce delivery costs. Compared with traditional distribution, this kind of distribution has an advantage in terms of manpower costs. In addition, this model can fully organise the idle people in society and realise the effective use of idle resources.

Thirdly, distribution behaviour is autonomous. Under the crowdsourcing model, people have more freedom to choose and can reflect their own value, and its distribution model follows the basic concept of more work for more pay and less work for less pay. Therefore, delivery personnel tend to improve delivery efficiency to achieve their own interests and gain profits by delivering more parcels. Unlike traditional logistics distribution personnel, the main body of the distribution is the one who completes all the tasks, and the more tasks are completed, the more pay they receive, and they are able to make reasonable arrangements according to their own time and have more freedom.

Fourth, on-demand collection and delivery model. The sender (or recipient) forms a delegated collection and delivery relationship with the delivery agent through the online platform, meeting the "one-to-one" collection and delivery needs with a "point-to-point" mode of operation.

2.2.2. Existing Models for Crowdsourcing Logistics

Crowdsourcing logistics is gradually formed under the law of network informatization, and is a product of the Internet model. This operation mode has responded to the development needs of the times, and itself has been continuously developed, improved and innovated under the development of information network. From 2014 onwards, crowdsourcing logistics platforms have emerged one after another in China, and according to the characteristics of existing market participants, the main crowdsourcing platform operation modes are the following categories [4]:

One is a third-party crowdsourcing platform. From the business content, including crowdsourcing express, crowdsourcing logistics and crowdsourcing express three types [5] . Crowdsourcing express is the same city small "point to point" instant delivery, to meet the needs of restaurants, flowers and other O2O scenarios such as errands; crowdsourcing logistics involves road transport in the express trunk transport outsourcing, warehouse to warehouse commodity transport and supply chain logistics social outsourcing needs.

Second, the construction of e-commerce crowdsourcing platform. Baidu takeaway, Meituan, hungry and other life scene class O2O e-commerce platform in the self-built delivery team at the same time, the crowdsourcing model will be a large area to promote and popularize.

The third is the effective combination of traditional courier and crowdsourcing [6]-[7] . Crowd-sourcing business is being introduced through the campus CaiBird post, where the last 500 meters of delivery is done by campus students, and crowdsourcing business for professional couriers is being launched in the field of e-commerce returns. Of course, crowdsourcing models that serve different scenarios are also being integrated with each other.

2.2.3. The Advantages of Crowdsourcing Logistics

(1)Optimise resource allocation and improve resource utilisation. Crowdsourcing logistics effectively incorporates social idle resources into the platform to better meet the logistics and distribution needs of merchants in P2P and 020. For enterprises, this model can reduce personnel costs, do not need to recruit more professional distribution personnel, but through the crowdsourcing platform way to achieve distribution, effective savings in company costs, improve the company's distribution efficiency, but also in the quality of service will further improve. The crowdsourcing model actually involves the public in logistics distribution, breaking down centralised distribution to achieve full participation, effectively mobilising social resources and achieving optimal allocation of resources. For the delivery personnel in the crowdsourcing model, they are free to join according to their own situation, which can not only increase the income of the delivery personnel, but also reduce the company's operating costs.

(2) Through the "Internet + logistics" approach, big data, cloud computing and logistics distribution are organically integrated to effectively improve delivery efficiency and reduce delivery time. The crowdsourcing platform can effectively integrate the information of the delivery personnel with the information of the customers, and achieve the optimal matching between them through big data and the network. The crowdsourcing model is an intelligent delivery model that makes delivery more convenient. At the same time, with the aid of intelligent systems such as GPS, delivery personnel can choose the optimal delivery route, improving delivery efficiency and reducing delivery costs. In addition, for customers, they will be able to grasp the circulation of their goods through a mobile phone app, so they do not need to wait anxiously, and their own satisfaction will be significantly increased.

(3) Substantial reduction in warehouse stock and staff numbers, saving companies money. In terms of costs, crowdsourcing logistics also has the advantage of saving unnecessary expenses and optimising its own resources to minimise costs. Firstly, crowdsourcing implements a dynamic warehousing model, where goods are run in vehicles on different traffic routes, so that if demand arises the nearest vehicle can be selected for its supply. Secondly, the crowdsourcing model allows couriers to be more free and completely voluntary, choosing whether to deliver according to their own circumstances, and the company does not have to pay a fixed staff cost, so it can effectively reduce business costs.

3. Analysis of the Current Situation and Problems of Community Distribution Development

3.1. Analysis of the Current Situation of Community Distribution

As the e-commerce market continues to grow, there is an increasing demand for community delivery services. In China, for example, the size of China's community logistics market has reached nearly 100 billion yuan in 2019, while this is expected to exceed 150 billion yuan by 2023. The development of community delivery services is mainly participated by multiple parties such as logistics companies, e-commerce platforms and community service companies.

By establishing their own community logistics systems, logistics companies provide various types of logistics services to community residents, such as home appliance installation, home maintenance, household cleaning, second-hand recycling, etc. E-commerce platforms, on the other hand, provide users with various types of delivery services such as household goods, food, medicine and express delivery through their own delivery networks. Community service companies, on the other hand, mainly provide lifestyle services, such as food and beverage delivery, community supermarkets, etc.

3.2. Problems with Community Distribution

Despite the widespread use of community delivery services, a number of problems remain:

(1) Inadequate service coverage: Traditional community delivery services usually only cover residents in a small area and cannot provide services to a wider range of users.

(2) Single type of service: Traditional community delivery services usually provide only a few types of services such as food, medicine and express delivery, which cannot meet the diversified needs of users.

(3) Inefficient service: Since traditional community delivery services often use manual delivery methods, the delivery efficiency is low.

(4) Difficult to guarantee service quality: Traditional community delivery services are difficult to guarantee service quality due to the uneven quality of delivery personnel.

4. Analysis of Crowdsourcing Models for Community Logistics Development

4.1. Necessity Analysis

The need to develop a crowdsourcing model for community logistics is mainly reflected in the following aspects:

(1) Meet the diverse needs of users: The crowdsourcing model can expand the scope of community logistics services to cover a wider range of users, while also providing diverse services according to the needs of users.

(2) Improving distribution efficiency: The crowdsourcing model allows for the use of a large number of individuals or organisations for distribution, improving distribution efficiency and reducing costs through the sharing economy.

(3) Improving service quality: The crowdsourcing model can improve the quality of service providers and service quality through the platform's audit and supervision mechanism, providing users with better quality services.

(4) Promote community economic development: The crowdsourcing model can promote communication and cooperation among community residents and drive the development of the community economy.

4.2. Feasibility Analysis

The feasibility of developing a crowdsourcing model for community logistics is analysed in the following ways:

(1) User needs: Through research and analysis of user needs, the types of services and coverage of the community logistics crowdsourcing model are determined.

(2) Service providers: The quality and service quality of service providers are improved through the platform audit and supervision mechanism to ensure the reliability of services in the crowdsourcing mode.

(3) Platform construction: Establish a delivery platform suitable for the community logistics crowdsourcing model, providing services such as delivery task release, delivery agent recruitment and task management to ensure the stability and security of the platform.

(4) Regulatory mechanism: To establish an effective regulatory mechanism to strengthen the management and supervision of service providers and platforms to safeguard the rights and interests of users and the quality of services.

4.3. Community E-commerce Logistics Crowdsourcing Distribution Platform Design

4.3.1. Platform Design Requirements

The community e-commerce logistics crowdsourcing delivery platform is a platform that connects merchants, community deliverers and consumers, enabling the ordering, delivery and merchandise delivery through internet technology and crowdsourcing models. The design of the platform should take into account the needs and habits of users and meet the following design requirements.

(1) Security

The platform needs to have strict user authentication and data encryption safeguards to ensure the security of the platform, which mainly involves the following aspects:

The first is user data security. The community e-commerce logistics crowdsourcing delivery platform needs to collect users' personal information, including names, addresses and contact details, so it needs to establish a perfect user data security mechanism to ensure that the privacy and safety of user data is not compromised.

Secondly, transaction security. As an e-commerce platform, the community e-commerce logistics crowdsourcing delivery platform needs to handle transactions between users, including payments and order processing, so it needs to establish a perfect transaction security mechanism to ensure the safety and reliability of transactions.

Finally, system security, the community e-commerce logistics crowdsourcing delivery platform needs to ensure the stability and security of the system to avoid problems such as hacking and malware invasion.

(2) Reliability

The reliability of the community e-commerce logistics crowdsourcing delivery platform is the basis for its operation and development, which includes the stability of the system, the accuracy of the data and the feasibility of the business. When designing the platform, the reliability of the platform needs to be fully considered and a series of measures need to be taken to ensure the normal operation of the platform.

Firstly, a sound platform management system needs to be established, including security management, business management and technical management. The platform needs to have special management personnel for daily maintenance and supervision to ensure the stability and normal operation of the platform. At the same time, standardised business processes and operational specifications need to be established to clarify the operational processes and requirements of each business in order to reduce operational errors and business risks.

Secondly, advanced technical means are needed to ensure the reliability of the platform. The platform should adopt highly reliable servers and databases and advanced data backup and recovery technologies to ensure the security and reliability of the platform data. At the same time, a perfect information security system needs to be established, including network security and data security, and corresponding technical means need to be adopted to guarantee the security of the platform.

Finally, a perfect monitoring mechanism and feedback mechanism needs to be established to discover and solve problems and risks in the operation of the platform in a timely manner. The platform needs to establish a perfect monitoring system to monitor the operation status and business processes of the platform, and discover and deal with abnormal situations in a timely manner. At the same time, a perfect user feedback mechanism needs to be established to deal with the problems and opinions fed back by users in a timely manner and improve the user satisfaction of the platform.

(3) Flexibility

The flexibility of a community e-commerce logistics crowdsourcing delivery platform refers to the fact that the design and functionality of the platform should be flexible enough to accommodate the needs of different communities and crowdsourcing delivery models. The following are some aspects of the flexibility of a community e-commerce logistics crowdsourcing delivery platform:

I. Community choice flexibility: The platform should allow communities to freely choose to participate in or withdraw

from the delivery service, while the delivery plan can be customised according to the characteristics and needs of the community, such as delivery time, service scope and type of goods.

II. Flexibility of delivery modes: The platform should support a variety of delivery modes, such as self-collection, home delivery and collection of payment, to suit the needs of different users.

III. Crowdsourcing staff management flexibility: The platform should have flexible crowdsourcing staff management functions, including recruitment, evaluation and rewards, to ensure the quality and service level of the crowdsourced staff.

IV. Flexibility in payment methods: The platform should support a variety of payment methods, such as online payment and cash on delivery, to meet the payment needs of different users.

V. Flexibility in data statistics: The platform should have flexible data statistics so that managers can keep abreast of the operations of community logistics crowdsourcing delivery and make adjustments accordingly.

4.3.2. Functional Module Design

The Community Logistics Crowdsourcing Delivery Platform is an important tool and platform for the implementation of the community logistics crowdsourcing delivery model, with functions such as information sharing, logistics coordination and risk control. The Community Logistics Crowdsourcing Delivery Platform mainly consists of eight modules, namely: registration/login module, task release module, task matching module, logistics tracking module, payment and settlement module, evaluation and feedback module, data statistics module and security management. Module. The details are shown in Figure 1:

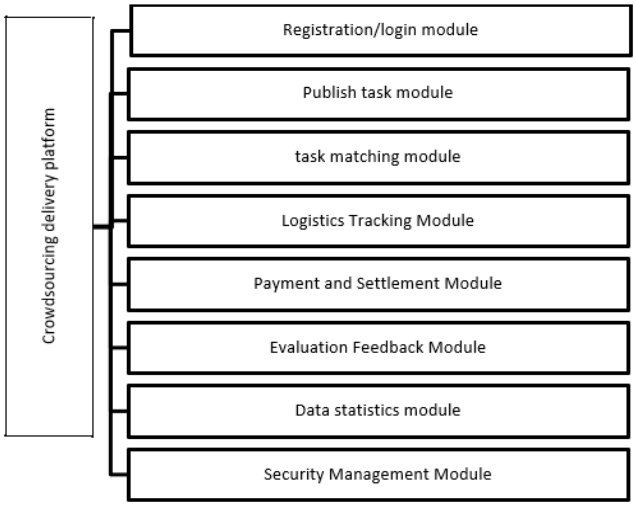


Fig 1. Basic function module of crowdsourcing distribution platform

(1) Registration/Login module: Users need to register and log in to the platform before they can perform crowdsourcing delivery services. This module needs to include user identity authentication, mobile phone number verification and other functions to ensure the security and reliability of the crowdsourcing delivery service.

(2) Posting task module: This module is used to post crowdsourcing delivery tasks. Users can post tasks by filling in order information, delivery range, delivery time, delivery cost and other information. The platform can also provide intelligent recommendations, price strategies and other functions to help users post tasks faster and select the most suitable deliverers.

(3) Task Matching Module: This module is used to match the crowdsourced delivery tasks released with the deliverers. The platform can perform intelligent matching based on task requirements, deliverer qualifications, reviews and other information, and provide various matching strategies to meet user needs.

(4) Logistics tracking module: This module is used for real-time tracking of distribution status and location, providing real-time information on distribution routes, distribution progress, etc. to ensure the safety, reliability and timeliness of the distribution process.

(5) Payment and settlement module: This module is used for the payment and settlement of crowdsourced delivery costs. The platform can provide a variety of payment methods and settlement strategies, as well as bill management and reconciliation functions to protect the rights and interests of users and deliverers.

(6) Evaluation and feedback module: This module is used for evaluation and feedback from users and deliverers, helping the platform and users to better manage and monitor the quality of delivery services and provide suggestions for improvement and optimisation.

(7) Data statistics module: The platform needs to support data statistics and analysis, including the collection and analysis of data such as order volume, delivery efficiency and user reviews. Through the statistics and analysis of data, the operation and management of the platform can be optimised.

(8) Security management module: The platform needs to support security management, including user information security, transaction security, data security and other aspects of security. The platform needs to take a variety of security measures to ensure the safety and reliability of user data and transactions.

5. Safeguards

In the crowdsourcing distribution model, the implementation of safeguards is an important part of ensuring the smooth running of the entire logistics process. The following are some of the key measures for safeguards in the development of crowdsourced distribution models in community logistics:

(1) Information risk assurance measures

In order to ensure the transparency and control of the logistics process under the crowdsourcing delivery model, a logistics information platform needs to be established, through which order information, delivery personnel information and delivery route information can be tracked and supervised in real time. At the same time, the platform should be equipped with relevant data analysis and management functions to enable effective processing and analysis of logistics data, providing strong support for subsequent management and decision-making.

(2) Quality risk assurance measures

Establish a strict product quality control and supervision mechanism to ensure that the quality of products delivered by the crowdsourcers meet the standards and requirements. At the same time, a comprehensive return and exchange mechanism is established to deal with product quality issues in a timely manner and improve user experience and trust.

(3) Security risk assurance measures

In the community logistics crowdsourcing delivery model,

delivery agents need to enter consumers' residential areas to make deliveries, so the safety of delivery agents also needs to be taken seriously. Platforms can provide security risk protection by:

A. Background checks are conducted on delivery personnel to ensure that the identity of the delivery personnel is genuine and reliable.

B. The delivery person should wear a work badge or logo provided by the platform during the delivery process so that the consumer can confirm the identity of the delivery person.

C. Provide emergency contact numbers for delivery staff to alert the police and contact the delivery staff in the event of a safety issue.

D. Delivery personnel shall comply with relevant traffic rules and delivery standards to ensure the safety and quality of delivery.

(4) Financial risk protection measures

In the community logistics crowdsourcing delivery model, delivery agents are usually freelancers or part-timers who earn their income from payment for completing orders. As a result, problems such as delivery agents refusing to deliver or failing to complete delivery tasks as required during the delivery process may be detrimental to consumers' rights and interests.

In this case, the community logistics crowdsourcing delivery platform can introduce capital risk protection measures, i.e. the platform will advance the payment after the delivery person submits the order and completes the application. After the consumer confirms receipt of the goods, the platform will then pay the reward to the delivery person. This will protect the rights and interests of consumers, and at the same time increase the motivation and satisfaction of the distributors, thus promoting the stable development of the community logistics crowdsourcing delivery model.

(5) Legal risk protection measures

Establish legal and compliant crowdsourcing contracts and agreements to clarify the rights and responsibilities of both parties. At the same time, comply with relevant laws, regulations and policies to prevent infringement of the legal rights and interests of users and crowdsourced delivery personnel and reduce legal risks.

6. Conclusion

As a new mode of distribution, community crowdsourcing logistics has a bright future. In the future, with the development of community economy, community crowdsourcing logistics will gradually become one of the main forms of community logistics. At the same time, with the continuous development of Internet technology and logistics technology, the operational efficiency of community crowdsourcing logistics will be further improved, while the user experience will also be gradually enhanced. Therefore, the future development trend of community crowdsourcing logistics will be:

Firstly, community crowdsourcing logistics will become increasingly popular. In the future, as people's quality of life requirements continue to improve, community crowdsourcing logistics will become an essential part of people's lives.

Secondly, community crowdsourcing logistics will further improve the efficiency of logistics operations. Through the operation of community crowdsourcing logistics, it will allow logistics companies to better grasp the information of community distribution, thus improving the efficiency of logistics operations.

Finally, community crowdsourcing logistics will be further enhanced in terms of user experience. As logistics companies continue to innovate in community crowdsourcing logistics, the delivery experience for users will become more convenient and efficient, thus enhancing user recognition of logistics companies.

References

[1] Chen, D. (2008). On the Development and Exploration of Community Logistics. modern Logistics, (5), 47-49.

[2] Liu, X. (2017). Development status and prospects of "Internet + community" terminal logistics model. Business Economics Research, (2), 100-102.

[3] Wang, J., & Li, H. (2019). Research on the Current Situation and Development Trend of Crowdsourcing Logistics. Logistics Technology and Application, (6), 25-27.

[4] Li, X. (2017). Feasibility analysis of postal development of crowdsourcing logistics. China Post, (07), 42-43.

[5] Wang, M., & Zhang, Y. (2019). Research on Crowdsourcing Logistics Model and Its Influencing Factors. logistics Technology, (22), 100-102.

[6] Xu, Y. (2018). Research on Logistics Distribution Mode Based on Crowdsourcing. logistics Technology, (11), 29-31.

[7] Jiang, S., & Zhu, Y. (2019). Analysis of the Characteristics and Development Trends of Crowdsourcing Logistics. Logistics Technology, (11), 146-148.