

2014

BioTechnology

An Indian Journal

FULL PAPER

BTAIJ, 10(12), 2014 [6056-6062]

The economic explanation for the operation mechanism of farmer-supermarket direct purchase platform based on two-sided markets theory

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ABSTRACT

Farmer-Supermarket Direct Purchase Platform as a bridge between the consumers and the specialty cooperative of peasants, play an important role in increasing the income of farmers and promoting the coordinated development of urban – rural economic. This article focuses on the farmer-supermarket direct purchase's economic characteristics and its operation Mechanism by employing the theory of two-sided markets. The results and suggestions of the paper will be useful for making industrial and regulation policies by governments.

KEYWORDS

Farmer-supermarket direct purchase platform; The operation mechanism; Two-sided markets.



INTRODUCTION

Farmer-Supermarket Direct Purchase is the concrete practice which can promote and balance the development of urban and rural, it is also an innovation of our country's form of circulation of agricultural products, and it is a new circulation way of agricultural products of which farmers sign the agreement of intentionality with merchants and provide agricultural products for supermarkets, food markets and the convenience stores straightly. The government attaches great importance to the work of promoting the development of Farmer-Supermarket Direct Purchase, under the support of the central government, the Ministry of Commerce started to explore the new patterns of agricultural products circulation - "Farmer-Supermarket Direct Purchase" since 2007. In 2011, the Ministry of Commerce and the Ministry of Agriculture jointly issued "The guidance on the work of promoting the development of Farmer-Supermarket Direct Purchase from the Ministry of Commerce and the Ministry of Agriculture". Farmer-Supermarket Direct Purchase can make the cost of agricultural products' circulation reduced by 10% - 15% on average because of that farmers provide agricultural products for merchants straightly which can reduce the intermediate links and lower the terminal price. More than 70% of the agricultural products are sold by supermarkets in the Asia Pacific region and in America, the proportion reaches up to 80%, compared with them, our country has huge potential for future development because the proportion of us is only between 15% and 18% at present.

With the rapid development of the specialty cooperative of peasants and the gradual improving of some industries' status such as chain supermarkets, our country has gotten the basic conditions to develop Farmer-Supermarket Direct Purchase, but there are still many problems urgently to be cracked in the process of advancing. Such as the high barriers to entry the Farmer-Supermarket Direct Purchase Platform, the high costs, the long cycle of payment and settlement, the asymmetry power in negotiate between the specialty cooperative of peasants and Platform Enterprises, many defaults caused by purchase prices, the diversity of circulation patterns and market competitions. Reaching the operation mechanism of the Farmer-Supermarket Direct Purchase Platform has contributed to solving the above bottleneck problem, further expanding the scale of Farmer-Supermarket Direct Purchase and improving the docking level, thus reduced circulation links, increased farmers' income, promoted and balanced the development of urban and rural.

This article is in view of the present situation that the theoretical study about Farmer-Supermarket Direct Purchase in the theoretical circle is lagging, used the theory about the new form of industrial organization-Two-sided Markets, discussed the economics characteristics of the Farmer-Supermarket Direct Purchase Platform's operation mechanism and made a reasonable economic explanations, found the theory support behind its mechanism.

FARMER-SUPERMARKET DIRECT PURCHASE AND TWO-SIDED MARKETS

The research status of farmer-supermarket direct purchase

Farmer-Supermarket Direct Purchase is a pattern of agricultural products' circulation which has grown mature of the developed countries, and it represents the development direction of the agricultural products' circulation. Foreign scholars mainly adopt the method of empirical analysis to study the pattern of the Farmer-Supermarket Direct Purchase, and the main research contents include sales organization way of agricultural products, consumers' food consumption behavior^[1], the relationship between the supermarket business of agricultural products and farmers, etc^[2]. Farmer-Supermarket Direct Purchase is a new circulation pattern which our government is mainly promoting at present. The study about Farmer-Supermarket Direct Purchase mainly concentrates on the analysis of its function, implementing condition and pattern^[3]. Existing researches are all under the framework of One-sided Market, and cannot further study the Farmer-Supermarket Direct Purchase's operation mechanism^[4].

With the rapid development of information technology, many economic structures show a lot of network externalities. From the point of view of the market characteristics, the Farmer-Supermarket Direct Purchase Platform has the typical characteristic of Two-sided Markets. But there is still no thematic theoretical research about Farmer-Supermarket Direct Purchase Platform based on the theory of Two-sided Markets at present at home and abroad.

The theory of two-sided markets

The theory of Two-sided Markets is the hotspot and frontier areas to study for the international industrial organization. The achievements of existing theoretical researches about Two-sided Markets mainly reflected in the platform structure and characteristics, Platform enterprise competition and platform enterprise pricing these three aspects.

In the studies about the platform's structure and characteristics, from the point of view of the function provided by the platform, Evans and Schmalensee (2005)^[5] classify the industries which have characteristics of Two-sided Markets. The research of Gunsun Cheng and Wujun Sun (2006)^[6] thinks it is the structure of itself that makes that Two-sided Markets has Cross-network Externality effect. Armstrong (2002)^[7] defines the Two-sided Markets from the point of view of Cross-network Externality and thinks that the net effect of the one side user would also increase if the quantity of the other side user increased.

Many platform manufacturers in the Two-sided Markets are facing with fierce competition, so there are more research achievements about the competition between platform enterprises in the Two-sided Markets. Rochet and Tirole (2005)^[8] discussed the different behaviour of the competitive platform when it is under different governance structures by establish a general model. Aaron Schiff (2003)^[9] discussed a situation where open system platform share one side of user and makes that competition and platform symbiosis and balanced. Li Xu (2007)^[10] and Hongmin Chen (2007)^[11], two domestic scholars, studied the different market behaviour and performances of the Banknet when it is under different market structures by building Cournot competition model. They combined the lending model with the Hotelling model and analyzed the impacts caused by consumer preferences difference and credit difference on the market competition of commercial bank credit card.

The pricing strategy Platform enterprises in Two-sided Markets cannot be determined only according to traditional supply and demand analysis method or by the traditional multiple-product pricing method because they are different from traditional enterprises. Rochet and Tirole (2003)^[12] studied the problem about bilateral pricing of monopoly platform from the perspective of royalties. Rochet and Tirole (2002)^[13] also studied the centralized pricing mechanism about interchange fees of monopolies. Two of the domestic scholars, Li Xu and Hongmin Chen (2006)^[14] also studied how the bank card industry which has the characteristics of Two-sided Markets makes a price in our country and the formation mechanism of the POS transaction price. Li Xu and Hongmin Chen (2006)^[15] put the duopoly platform with Cross-network Externality as the research object and the exogenous pricing strategy from traditional Hotelling model as the endogenous variables to analyzed the platform's strategic choice about single pricing model and discriminatory pricing model.

According to all what I have just mentioned, the research of Farmer-Supermarket Direct Purchase Platform which already existed has ignored the Two-sided Markets feature which the platform itself has. The method the research used includes qualitative description method and model logic reasoning method that lacked quantity. The theory of traditional industrial organization cannot explain the internal impacts caused by network externalities, the network effect, the complementary demand of user and multi-homing behavior on the competition strategy of this platform, so it is necessary to have a new theory framework to bring the research content of Farmer-Supermarket Direct Purchase Platform into a unified system so that we can aim at the Farmer-Supermarket Direct Purchase Platform to start the

systematically analysis and comparative research on the network effect, the pricing strategy, the user behavior, and the platform competition and etc.

THE TWO-SIDED MARKETS FEATURE-SUPERMARKET DIRECT PURCHASE PLATFORM

First, the specialty cooperatives of peasants and consumers are respectively the upstream and downstream customers in the Farmer-Supermarket Direct Purchase Platform. The specialty cooperative of peasants can obtain profits from selling agricultural products, while the effectiveness of consumers come from consuming products. The service value of the farmer-supermarket direct purchase platform can be achieved only if the specialty cooperative of peasants and consumers complete transaction in the platform. So the two market demands have a certain complementarities. Second, along with the increase of the number of the specialty cooperative of peasants participating in one side of the platform, more consumers would be attracted at the other side of the market. When the number of specialty cooperative of peasants and consumers increase simultaneously, the utility of both side will increase accordingly due to the cross-network externality existing in both side. Furthermore, because of some factors like dissymmetry of trading information, basic costs of trading and popular distrust, the specialty cooperative of peasants, as the agricultural products provider, have trouble in selling more agricultural products to consumers, meanwhile, it is difficult for consumers to get the required agricultural products. So utilizing the service and information provided by the farmer-supermarket direct purchase platform, the trade between the two sides can be advanced, which reflects the supply and demand characteristics of farmer-supermarket direct purchase platform.

The basic function of the Farmer Supermarket Direct Purchase Platform is to promote and facilitate the transactions of bilateral users. Either the specialty cooperative of peasants or the consumers can find each other efficiently by the platform, and the efficiency of one side of the user would increase if the quantity of the other side of the user increase. Therefore, according to the classification standard about Two-sided Markets from Evans (2003)^[16], the platform has the characteristics which belongs to the Two-sided Markets of the market manufacturing model, the specialty cooperative of peasants displays their product on the platform, and consumers can buy the most complete products with the best quality and price by it.

KEY ISSUES IN THE FARMER-SUPERMARKET DIRECT PURCHASE PLATFORM

The pricing strategies of farmer-supermarket direct purchase platform under two-sided markets

The crossover network externality existing in two-side market makes the companies' competitions different from that in traditional markets. This can be manifested as that the utility of users in one side will be improved by increasing the number of users in other side. As a enterprise in Farmer-supermarket Direct Purchase Platform, its profits generates from fees charged from users. So the pricing of platform can't adopt the traditional analysis methods for the supply and demand in the single market, nor using the traditional method for multi-product pricing. In the platform, the pricing strategies and the changes of the price structure may affect the participating passion and the number of users, and ultimately affect the profit level of the platform. Therefore, pricing levels and pricing structure are the main factors in the pricing of "Farmer-supermarket Direct Purchase Platform".

First, Farmer-supermarket Direct Purchase Platform takes asymmetric pricing strategies in pricing structure. For obtaining the maximum profits, the platform employs different pricing models to treat the specialty cooperative of peasants and customers respectively. On the one hand, platform-enterprises internalize parts of network externality obtained by farmers' professional cooperatives and consumer as enterprise's own profits. The profits come from the price differences between retail and wholesale and the slotting fees collected from the specialty cooperative of peasants. At present, the

slotting fee charged by platform-enterprises accounted for nearly half of the product sales price. The slotting fee results in the cost of sales channel of specialty cooperative of peasants is very high. Furthermore, platform-enterprises can set up different kinds of charges in each link of agricultural product marketing in platform. These charges include the slotting fees, the sponsorship of a new store's expansion, anniversary sponsorship fees, marketing fees and holiday promotion fees et al. The small-scale specialty cooperative of peasants, consisting of scores or hundreds farmers, cannot bear such high cost. On the other hand, with the increasingly fierce market competition, the platform-enterprise takes a free-service pricing modes and introduces various preferential measures to attract more consumers.

Second, in terms of the level of pricing, how to set prices so as to attract the specialty cooperative of peasants into platform is a major factor which must be considered at the beginning of the platform. Due to that both sides of "Farmer-supermarket Direct Purchase Platform" will impose a certain crossover-network externalities on the other, the platform can attract the specialty cooperative of peasants into it through charging free on accessing it or giving subsidies to the specialty cooperative of peasants. Then the positive externalities on customer side of the platform will improved by increase the number of the specialty cooperative of peasants in platform. When the platform matures, it can charge the transaction fee on the other side of platform, namely, logistics service providers or consumers. At the same time, it must take account of the regional government support policies on the specialty cooperative of peasants or agricultural product marketing policies into consideration, and all of these will have a great impact on the decision of transaction fees. In addition, the pricing structures and pricing forms of platform will be affected by other factors including the bilateral users' own demand price elasticity, the crossover network externality between bilateral users, the costs for platform enterprises servicing, the scale and the number of bilateral users, and the differences between platforms enterprises and so on. Therefore, the platform must also take into account the changing market structure, consumer expectations and the dynamic competition of "Farmer-supermarket Direct Purchase Platform" while it is determining the revenue model and the best pricing strategies of "Farmer-supermarket Direct Purchase Platform".

The competition strategies of farmer-supermarket direct purchase platform under two-side market

In the markets of Farmer-supermarket Direct Purchase, the specialty cooperatives of peasants will market their agricultural product in multiple transaction platforms. The range of transaction objects is expand and the function of crossover externalities is improved simultaneously. This is to say that the specialty cooperative of peasants would choose more-belong if the benefits brought by potential customer groups are more than the costs of more-belong. For consumers, extra economic expenditures for choosing more-belong is about zero except a certain time cost, so consumers generally show more-belong characteristic, that's to say, consumers will fulfill their transactions in multiple platforms for the category completeness and quality and price optimization. Because each competing platform possess clear diversity resulting from the products provided by different specialty cooperative of peasants, the differentiation of customer groups will be generated due to the customers to choose different platforms. If a customer prefer the agricultural product in certain platform, then the customer belongs to the platform. The consumers with more-belong attribution will interested in products from multiple platforms. Despite the consumers in "Farmer-supermarket Direct Purchase Platform" can freely choose it belonging platform, the market of "Farmer-supermarket Direct Purchase" takes on the pattern of "buyers are single-belonging, and sellers are more-belonging". In addition, the cross-network externalities of the platform will lead to the situation of winner takes-all due to the competitions between platform enterprises. So each platform focuses on the single-belonging consumers. As long as the platform has large amount of buyers, it will attract large numbers of specialty cooperative of peasants to supply agricultural products, and increase its business to gain competitive advantage.

Under buyer's market condition in modern economy, the competition among the specialty cooperatives of peasants are much more intense than that among consumers. In other words, the competition usually only exists among specialty cooperatives of peasants, not among customers. In reality, the specialty cooperative of peasants is frequently unable to find its customers, rather than consumers can't search for their partial agricultural. So the influence on customers caused by the number of the specialty cooperative of peasants in "Farmer-supermarket Direct Purchase Platform" is far less than the influence on specialty cooperative of peasants caused by the number of customers on the platform. That is to say that the external coefficient of crossover network of customers is far larger than that of suppliers. The unequivalence of external coefficient can be reflected in the early competition strategies of Farmer-supermarket Direct Purchase Platform. In the early competition, Farmer-supermarket Direct Purchase Platform adopted preferential policies to attract consumers, increase its own consumers, then attract the specialty cooperative of peasants to compete by the huge crossover-network externalities produced by consumers.

Under the two-side market, the development of platform enterprise's competitive strategy is affected and controlled by the number of consumers in the market, the number of the specialty cooperative of peasants, frequency of transactions, how much externalities consumers can bring to the specialty cooperative of peasants and how much externalities the specialty cooperative of peasants can bring to consumers. In addition, the platform only playing a role being a intermediary, its agricultural products and services are provided by the specialty cooperative of peasants. Because consumers still purchase products or services utilize the platform, the platform will undertake some responsibility to guarantee the quality of product and service. The quality problems of products from platform will damage its brand image, which can eventually effect the platform's revenues and profits. Thus, platform businesses need to strengthen the supervision to the platform users on both sides. The quality of agricultural products and the services offered by platform are also the key factors in the competitions large amounts of money.

CONCLUSIONS

Based on the analysis about the domestic and foreign operation mode and mechanism of Farmer-supermarket Direct Purchase Platform, this paper discussed the economics features about the platform, and found that the characteristics of the complementary and dependent supply and demand relationship and the multipartite of participants are beyond the scope of classical economics explanation. Therefore, the economics feature of operation mechanism of Farmer-supermarket Direct Purchase Platform is investigated in detail based on new industry organization theory-Two-side Market Theory, and a reasonable economics explanation is given in this paper. The changeable commercial modes, owner structures, access methods, and the behavior of participation will lead to the operating strategies changes of "Farmer-supermarket Direct Purchase Platform", so it's apparently not enough to use static analysis method to simply describe the mechanism and strategies problems existing in platform operation. However, there is few research about the dynamic nature of two-side market. We can conclude that from the dynamic perspective to describe the characteristics of the market in Farmer-supermarket Direct Purchase Platform and to study its Internal operation mechanism will be a new research direction.

ACKNOWLEDGEMENT

This work was supported by a grant from the 2012 Science Foundation for Youths of the Department of Education of Jiangxi Province (No. GJJ12277), a grant from the 2012 Humanities and Social Science foundation of College of Jiangxi Province (No.GL1216), a grant from the 2012 Humanities and Social Science foundation for Youths of Education Department of China (No. 12YJC630263), a grant from the 2010 Humanities and Social Science foundation for Youths of

Education Department of China (No. 10YJC630255) a grant from the 2011 The national natural science fund projects of China (No. 71162012).

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