

# Research of the Risk and Profitability of Community Group Purchasing in the Context of New Retail Economy

Boxiong Li<sup>1, \*, †</sup>, Bin Lin<sup>2, †</sup>, Runying Zhu<sup>3, †</sup>

<sup>1</sup> School of economics and management · Beijing Institute of Technology · Beijing · 100081 · China

<sup>2</sup> The Department of Business Administration · Zhuhai College of Science and Technology · Zhuhai · 519000 · China

<sup>3</sup> School of Accounting · Capital University of Economic and Business · Beijing · 100070 · China

\*Corresponding author. Email: 1120181042@bit.edu.cn

†These authors contributed equally.

## ABSTRACT

With the development of e-commerce, several forms of consumption appeared. Group purchasing is one of the forms of online shopping, which defines purchasing grocery in community groups from retail business by e-commerce ways. This paper will illustrate the properties of group purchasing and conclude the development process of group purchasing by researches. Then, it is going to discuss the risk and profitability of group purchasing nowadays by the methods of literature research, case study, and comparative analysis. Firstly, index analysis of the risk and profitability of community group-buying is the next part of the discussion, which is based on Dingdong (Cayman) Limited. Secondly, the category of risks will be given, which generally includes three main risks, competition Risk, Financial Risk, and Operational Risk. The aim is to form a solution to benefit these two factors. Finally, the result of the research can be a guide to improve the profitability of businesses in the competitive group purchasing area and reduce the potential risks of the businesses.

**Keywords:** Community Group Purchasing, Risk, Profitability, Strategies.

## 1. INTRODUCTION

The market scale of community group purchasing in China has increased dramatically, from less than ¥400 hundred billion in 2019 to nearly ¥800 hundred million in 2020 and according to some authentic research centers like AiRui Consulting, they expect the market scale will become more than ¥1000 hundred billion in 2022 [1]. Thus, this kind of business model has become a significant model in the business world, probably become a new driving force for economic development, and contributed a lot to the public's daily life. Especially during COVID-19, the special time helped customers accustomed to using community group purchasing, involving almost everyone. Community group purchasing has occupied more than 300 cities and more than 1500 rural places [2]. Regarding the supply side, with the technology development, e-commerce culture's universal, and the influx of capital, many community groups purchasing companies have matured

and even became stars in the capital market. Moreover, community group purchasing involved the Vegetable basket project and many aspects of necessities of life, which also attract government attention. However, Ultra-high-speed development also caused many troubles, such as how to control food safety, stimulate and keep the customers' needs in the post-epidemic era, guarantee the group leader's performance, and so on. Therefore, these companies and us need to find a healthier and more efficient developing path for this new and powerful business model. Knowing their risk and profitability is an important issue to deal with this problem.

Previously, there is a few research on the field of new retail, which contains a new way of online shopping known as group purchasing. A number of papers and journals aim at analyzing group purchasing. As a result, researchers have agreed in many parts of group purchasing, which means many properties of

group purchasing are discovered. Firstly, there is a clear definition of group purchasing, which can be described as purchasing groceries in community groups from the supermarket by online tools [3]. And all the steps and components of group purchasing are defined as well. Generally, the purchasing process has three steps: generating, ordering, and distributing [4]. The value chain of group purchasing is also clear. The upstream is online retailers, and the midstream is the group purchasing leaders who take charge of the connection between upstream and downstream. Downstream is the customers. The value proposition is based on consumer demand. The key business is the midstream that obtains the profit by providing the value-added service. The operation mode is to customize the upstream through the downstream data, and the service mode is the continuous interactive community mode [5]. The advantages and disadvantages have been concluded clearly. Group purchasing is actually an "acquaintance economy," which decreases the cost of reservation and distribution and provides high-quality goods at a low price to the community consumers. Nevertheless, the competition, high turnover rate of group purchasing leaders, and product homogenization are the disadvantages of this way of shopping [6].

Throughout the researches, it is obvious that many researchers aim at making an introductory conclusion for this new business which contains chain, value, market analysis. However, plenty of areas of group purchasing still need further research, which can enable the business and investors to form a clear and comparable standard of this market. Accounting information of the business and market lacks analysis, which includes ratio analysis and the sum of operating management. The reason causes the problem may be due to the difficulty in collecting internal data of group purchasing firms. Without computing and comparing the operating index, it is impossible to form a quantitative conclusion. That is the reason why many existing papers focus on describing and discussing the qualitative problem. Moreover, further research will guide investors and managers when they are dealing with profitability problems. The determinants of profitability of group purchasing still lack specific analysis. It is unclear that how to maximize business profitability in a business of different sizes and conditions. Identification of features that can affect profitability still needs further study. Meanwhile, the risk of the business is still lack in analysis and summary. Summary of all risks during every step of group purchasing is an important factor to consider in the future. Few researchers pay attention to risk management which is also a significant part of the development of group purchasing companies. All the steps of group purchasing may involve risks, which makes the analysis and conclusion more complex.

Nowadays, few researches aim at risks in all steps of the group purchasing process.

To fill the gap between Known and unknown fields, our research aims at using analysis methods to research the risk and profitability of community group purchasing in the context of the new retail economy. The research involves three analysis methods: literature research, case study, and comparative analysis, respectively. The basic analysis framework of the study contains three steps, concluding the previous study to summarize the situation and regular of this area, using case study and comparing the target firm with the average level in the market to identify the key profitability factors and analysing risks in the process using the results of the comparative calculation.

## **2. METHOD**

### ***2.1. Documentary research***

Documentary research uses outside sources and documents to support the viewpoint or argument of academic work. The process of documentary research often involves or conceptualizing, using, and assessing documents [7]. Journals, industry data, and financial statements will be fully used to support this paper.

Journal papers are expected to help us understand the risks that community group-buying may face and help us understand the profit model of dubbed community group buying and the current development direction of the industry. Also, we can find the current research gaps from the current journals.

Industry data will show us the development and operation of the industry with empirical evidence so that we can quickly understand the profit or loss of the community group-buying industry as well as the operation of the dubbed community group buying.

The financial statement is an accounting statement that reflects an enterprise's capital and profit status or a budget unit in a certain period, which will reveal the financial position, operating results, and cash flow of the enterprise comprehensively and systematically. It is helpful for us to understand if the tasks of the community group-buying enterprises were completed perfectly. Moreover, we can realize the enterprise's financial position, operating results, and cash flow, and then analyze the enterprise's profitability, debt-paying ability, investment income, and development prospects to find problems and adjust the direction of operation in time to formulate measures as well as improve the level of operation.

**2.2. Case study method**

A case study involves an up-close, in-depth, and detailed examination of a particular case or case, within a real-world context [8].

Ding - dong to buy food will be selected as a typical enterprise for key analysis. The community group buying platform operated and developed by Shanghai Yibemi Network Technology limited company. It is a self-run community group buying platform and a life service APP that provides distribution services. The main products are vegetables, fruits, meat, seafood and so on. Ding-dong to buy food is a giant in the field of community group buying and has achieved good results at present, which make it representative to reflect the whole industry. We will roundly analyse the strategic direction and profitability of Ding-dong to buy food. Its business results, competitive advantages, management model, and strategic planning will be elaborated in detail to help us get enough knowledge about the current situation, especially the profit model and potential risk of the whole community group buying industry.

**2.3. Comparison research method**

Comparative research, simply put, is the act of comparing two or more things to discover something about one or all of the things being compared [9].

On the one hand, this paper will choose Missfresh for horizontal comparison to help understand the competition situation of dubbed community group buying enterprises under the new retail background.

On the other hand, this paper will focus on Dingdong by fully comparing the profit situation in recent two years for vertical comparison, which will make us understand its profit model and its potential risks. Dingdong went public this year, and the prospectus has only two years` data, so the historical comparison will be performed during these two years.

**3. RESULT**

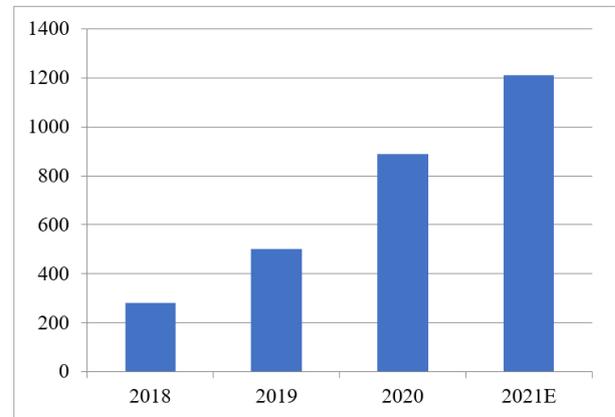
**3.1. Analysis of the community group purchase under the background of new retail**

“New Retail” is the term Alibaba uses to describe the blending of online and offline commerce through the digitization of the entire retail value chain for the benefit of both the merchant and the consumer" [10]. It uses digital payment data to invent not only new efficiencies and capabilities in logistics, marketing, and product development but also offer new tools and insights to merchants to reduce costs and drive sales; as well as provide customers with a seamless and customized shopping experience throughout the online and offline space. New retail companies can make accurate

predictions about future demand changes by leveraging the vast amounts of data available on the Web and better optimizing the supply chain and distribution logistics, providing merchants with personalized analysis, and actively interacting with customers. Major e-commerce giants and traditional retail enterprises have been exploring new retail; the community group purchase is one of them.

Community group purchase with the combination of new retail is based on the real offline community, community residents, or around the store managers to perform online group presale [11]. The user's orders that have completed the online payments will be collected to the community, then unified to send to the self-pickup site to purchase the members of the community.

Under the stimulation of the epidemic in 2020, China's community group-buying market will increase from 28 billion yuan to 89 billion yuan from 2018 to 2020. It is expected to reach 121 billion yuan in 2021. Although the scale is increasing year by year, the regulatory level will begin to introduce policies to standardize community group-buying in 2020 (As shown in Figure 1). The growth is expected to slow to 36% in 2021, less than half the previous year's level. It means there are some risks to the business model. The detailed number can refer to in the following graph.



**Figure 1.** Community group purchase market scale from 2018 to 2021

(Source: white paper of community group buying in 2020)

**3.2. Index analysis of the risk and profitability of community group buying—based on Dingdong (Cayman) limited**

**3.2.1. Strategy Risk**

Dingdong, found in May 2017, is one of the Chinese fastest-growing companies. Its goal is realizing "the world's largest and most trusted ingredient food operator and seller". Hence, good ingredients are available like tap water and benefit everyone and their mission is to

make fresh groceries as available as running water to every household[12]. Just in 2017, the company set the new supplying model--“pre-warehousing”, especially for some fresh products like vegetables, meat and shrimps, etc. Then Dingdong paid more attention to repurchase rate instead of profitability. During the COVID-19, the company caught the valuable opportunity to expand dramatically, and daily orders reached 500 thousand. Stock-market debuts also happened in 2021. For the next step probably Dingdong will continue to expand their market in different provinces and improve their service technicians.

However, when the company digs into some remote provinces where infrastructures are not as well as those in metropolitan so the cost of transportation and store will increase, and the food safety risk will also increase. The company relies heavily on sales of perishable products, and ordering errors or product supply disruptions or disruptions to its storage and distribution network may have an adverse impact on the profitability and operating results. Moreover, up to now, many communities have already had their own shopping delegations, so the fire competition will not only come from other big companies like Missfresh and Meituan but also from those small groups. Nevertheless, Dingdong probably will continue to remain in deficit in the following several years. How can let the market, especially their shareholders keep the confidence and give them more money to occupy the market is also a big challenge for Dingdong. Last but not least, after COVID-19, whether the customers’ need keep at a high level or not is a big uncertain and company need to find some effective way to stimulate the market’s need.

**3.2.2. Operating Risk**

For the Community Group, Purchasing companies’ operating pre-warehousing is a significant concept--which refers to the direct storage and operation of fresh, fast consumer goods in the community surrounding the dense construction of the front warehouse (generally within 3 km) by the rider responsible for the last kilometer of distribution of e-commerce model, mainly to meet the medium and high-line urban consumers on health (good), convenient (fast) fresh food and miscellaneous needs [13]. Pre-warehousing can help the company improve the delivery speed and cover more and more people, one of the most important parts of the supply chain. The Dingdong’s pre-warehouse number overtook the Missfresh’s, Dingdong’s GMV(gross merchandise volume) and revenue excess Missfresh. The detailed number can refer to the following Figure 2 and Figure 3.

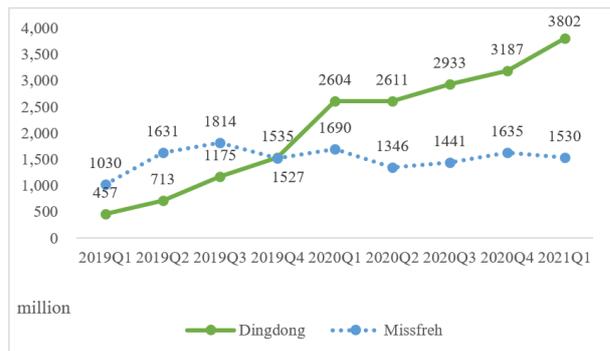
Thus, from those two trends (Figure 2 and Figure3), we can see to some degree, Dingdong’s sale strategy is more effective than the Missfresh perhaps can be used for reference for other Community Group Purchasing

companies. First, precisely locate the customer group. Moreover, continuously improve the user experience and ultimately improve the repurchase rate[13]. However, this kind of supply method also caused some trouble of earning profit in the short term as its economic scale is difficult to set up. This issue will be told in the profitability part.



**Figure 2. GMV**

(Source: REGISTRATION STATEMENT Dingdong and REGISTRATION STATEMENT Missfrsh)



**Figure 3. Revenue**

(Source: REGISTRATION STATEMENT Dingdong and REGISTRATION STATEMENT Missfrsh )

According to Figure 4, it is obvious that Dingdong's supply fee accounted for more part than Missfresh, although Dingdong’s cost percentage decrease gradually. This is an opportunity to improve its profit by improving its logistics and warehousing management. It is a good choice for the company to refer to some examples of other developed industries, as this field only has a very limited operating history. The solution will be told in the latter part.

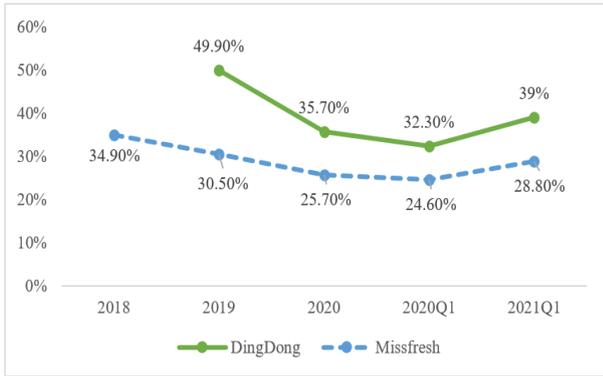


Figure 4. Performance fee rate

(Source: REGISTRATION STATEMENT Dingdong and REGISTRATION STATEMENT Missfrsh)

### 3.2.3. Financing Risk

Firstly, from Figure 5, it is obvious that Dingdong’s operating fee mainly depends on financing activity until now. The cash flow shows a typical model of the start-up company that still needs to expand the market share, does not have enough profits but has huge potential, needs to perfect its infrastructure, and has to continue invest programme. However, it is vital to guarantee that the company has solvency; otherwise, it will be easy to bankrupt. What’s more, now capital has entered this industry as many leading internet companies either build a new line or invest in other community group purchasing companies. Some leading companies like Dingdong and Missfresh have entered the stock market. Thus, although now there are still many small groups do some community group purchasing, this industry’s threshold has become higher.

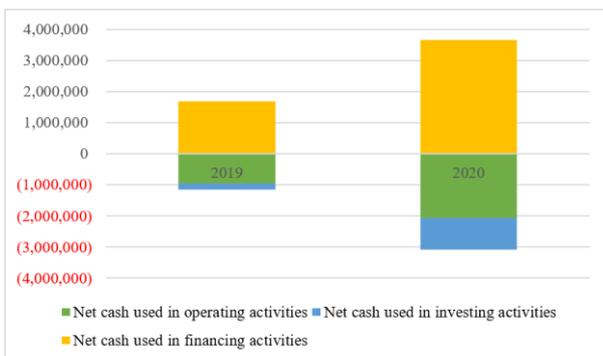


Figure 5. Dingdong Cashflow

(Source: REGISTRATION STATEMENT Dingdong)

Figure 6 and Figure 7 show these two companies’ solvency ability, respectively. Generally, Dingdong’s solvency ability is better than Missfresh in the short term, according to the first three indexes. Besides, for Dingdong, 2020’s capability is better than 2019’s. The quick ratio is almost equal to the current ratio can reflect that the company’s current asset quality is well. The

third ratio is negative because the net operating cashes in negative. The two companies are almost the same for long-term solvency, and the 2020 year’s ability even decreases, but long-term is not as urgent as the short-term one, and now they are all listed, so I do not think it is a big problem.

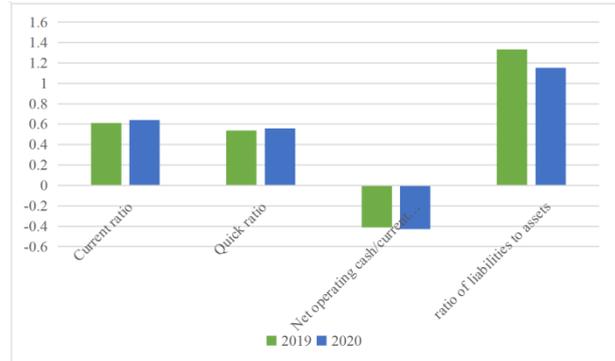


Figure 6. Dingdong Solvency

(Source: REGISTRATION STATEMENT Dingdong)

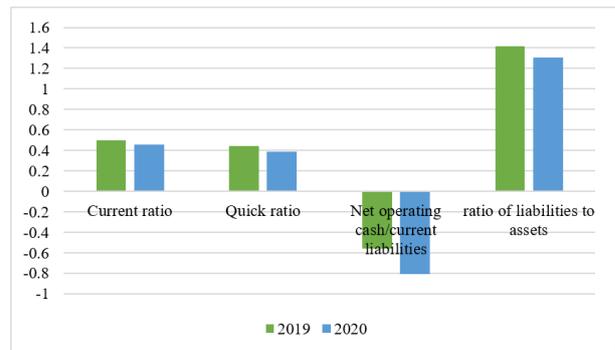


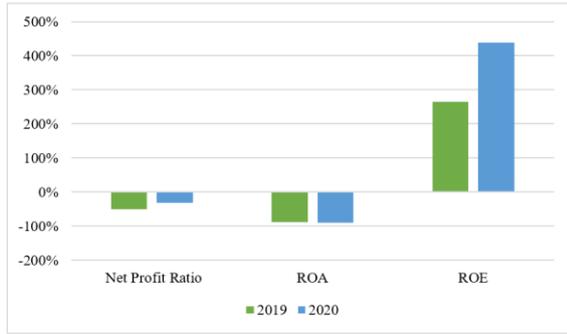
Figure 7. Missfresh Solvency

(Source: REGISTRATION STATEMENT Missfrsh)

### 3.2.4. Profitability analysis

Because Dingdong’s always remained net loss, so I did not calculate the PE (Price Earnings Ratio) and PB (Price Book Ratio). As the net profit is negative so maybe we need to look at the absolute value. According to Figure 8, the net profit ratio in 2020 was only half of 2019’s, ROA (Return On Assets) remained steady, and ROE(Rate of Return on Common Stockholders’ Equity) increased a lot. Thus, although ROE in 2020 is almost twice as much as in 2019, it is not mainly because of operating ability improvement. The main factor is the financial level.

Like the strategy risk part says, this kind of supply model needs a long time to go for profits. If the company cannot get the profit immediately, it needs to remain and keep orders growing faster to maintain market confidence.



**Figure 8.** Dingdong Profitability

(Source: REGISTRATION STATEMENT Dingdong)

### **3.3. The risk and profitability of community group purchasing**

#### **3.3.1. Competitional Risk**

Community Group Purchasing involves many kinds of members' benefits. Many leading internet companies enter this field to find a new point to boost their companies a new round of growth. Involving the essential public need, the government will probably set more rules to regulate business behavior, which may cause obstacles. Some communities that some small groups have occupied are also hard to conquer.

#### **3.3.2. Financial Risk**

Most companies in this field are still losing money. Thus how to get enough and high-quality financial support is a big challenge for them.

#### **3.3.3. Operational Risk**

Firstly, pre-warehousing is a heavier model, and companies are required to take on some of the column risks associated with infrastructure investment and inventory. Not only is there financial pressure, but there are also food safety issues that turnover and preservation technology can cause. Its management difficulties and costs are very large [14].

Moreover, after COVID-19, the need for Community Group Purchasing will likely decrease. How to increase the order and stimulate the need is also a vital challenge.

## **4. DISCUSSION**

As mentioned above, the risks of group purchasing are mainly divided into three core parts: competitional, financial, and operational risk, respectively. Figuring out the solutions to these risks is contributed to the improvement of profitability. The practical management methods are significant for further going concerns of group purchasing firms.

### **4.1. Improvements of gaining competitive power**

The risk of competition in the future generally relates to the growth of the market and product homogenization [15]. As a new profitable market appeared, the number of giant companies which invest in this area increases dramatically, which means more and more companies with high similarities will appear.

To deal with the problem, cost leadership and differentiation leadership should be choices for group purchasing companies.

Firstly, cost leadership requires the firm to provide products at relatively low prices, comparing with other companies. To decline the selling price, the firm has to decrease cost. By marginal effect theory, the firm should build a large-scale supplier chain which means, the company should directly purchase goods or WIP (work in process) from the productional industry without any middleman. Meanwhile, price setting should be done by a thorough consideration of other competitors. These measurements make contributions to form cost leadership.

Secondly, differentiation leadership strategy is more difficult to achieve, but it is also worth the effort. As a result of community-consuming, the goods people purchase is in the high level of homogenization, for example, aged residents pretend to buy fresh food through group purchasing. In contrast, other categories of good are seldom bought. To solve the problem, it is important to survey customers' trends which includes consuming a selection of people of different ages. The firms should consider selecting the proper regional target market. In China, the level of economic development is different in different cities. Different regions of consumer demand for products are not always the same. Purchasing power is also very different. From the operation mode of a community group purchase, it is unsuitable to develop in the first-line big city, but more suitable to win the competitive advantage and expand the market scale in the third and fourth-line cities. Therefore, the community group purchase platform first defines the main battlefield of market competition, which further determines the products, supply chain, and efficiency provided by enterprises. Identifying the target audience is also significant. The users of community group purchase are mainly women, baby's mothers in the community, who are the focus of competition in the community group purchasing. Compared with the single female customers, the baby's mothers are more inclined to choose the firm which provides more convenient logistics and distribution services. Therefore, the community group purchasing can tap the needs of users, provide more attractive products and pre-sale and after-sale services, and thus improve the market acceptance

and enhance the stickiness of the community residents to the platform. Then the firm should focus on the type of good that other firms rarely sell, which can improve the firm's competitive ability. However, the cost of selling new types of goods should be considered before making the judgement. Well-conducting of differentiation strategy can definitely release the stress of competition in the main markets. In all, both cost and differentiation leadership can be beneficial for solving competitive risk.

#### **4.2. Measurements in financing**

Since then, few companies earn profit through the analysis of the financial statement above. It is increasingly important to conduct a solution of it at the financial level. Cost analysis should be used to identify the expenditure in all the processes in group purchasing. And it can be a guide for a decrease cost. Fixed costs can be declined by technology development in delivery and dispatch systems. While variable overheads can be decreased by optimization of raw material. Then, optimizing the value chain can also benefit the profitability, for it can save the cost in the chain.

After identifying the value chain issue, the managers can spare more effort in decreasing its influence. Besides, financing is a common way to absorb investment and achieve the growth of the industry. With the funds, managers can widen the corporation and attract more partners, which is the way to earn more money and achieve organic growth. In the end, all the investments the company makes should be made with the help of investment appraisal methods, which include net present value, the initial rate of return, pay-back period. All the figures calculated will be used for making the judgement of investment. And many relative market researches should also be conducted to finally make sure that the firm can choose the most profitable plan for investing.

#### **4.3. Operational solutions**

Besides, as a new industry, the profitability of group purchasing can also be improved by operations in some stages.

Firstly, human resource management is necessary for the firm's further growth, which contains the management of group purchasing leaders and delivery workers. On the one hand, motivation policies are required to decline the turnover rate of group purchasing leaders, which is considered to be an uncertainty of the business. The policies may involve attractive conditions such as extra bonuses and discounts on products. On the other hand, the delivery staff should be well-trained to improve the efficiency of the transport.

Secondly, warehouse management is also a significant part of operational improvement, enabling the delivery process to be fast and effective. The location of the warehouse and the inventory should be matched to the demand in the community by technological tools. The firm should develop an intelligent system of dispatch to satisfy the need for delivery.

Thirdly, attractive advertisement is another key for improving sales, enabling the group purchasing activity to draw the attention of more residents in the community.

## **5. CONCLUSION**

### **5.1. Summary main findings**

Based on the strategy, operating and financial risk, and profitability analysis, we find mainly four risks about this business model's future development. Firstly, the competition will become more and more severe as many leading companies enter, some small but steady conglomerates, and even more strict supervision. Moreover, how to get enough and high-quality financial support. Meanwhile, the management of the pre-warehousing supply method. Lastly, how to increase the order and stimulate the need after the epidemic era. To deal with these problems, we make the following suggestions. Firstly, cost leadership and differentiation leadership should be choices for group purchasing companies. Secondly, cost analysis should be used to identify the expenditure in all the processes in group purchasing. Lastly, improve operation in some stages like human resource management, warehouse management, attractive advertisement, etc.

### **5.2. Limitations**

The findings of this study have to be seen in the light of some limitations. There are two major limitations in this study that could be researched in future research. First, most of the information in this paper is secondary data. This paper is based on some public journal papers, industry data, financial statements, and so on, but lacks primary data. More primary data can be collected and studied in future research to make the conclusion more authentic and reliable. In addition, Ding Dong was selected for the case study in this paper. However, it was listed this year, so we could only find the past two years' data in the prospectus, which made the data less sufficient. As time goes by, more and more data can come forth and be used for future research to make the papers more substantial and reliable.

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