

# Supply Chain Relationship and Cooperation Performance: Literature Review and Research Direction

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**Abstract**—Based on the existing literature, this article has expounded the concepts and measures of supply chain partnership and cooperation performance. Then it reviews the relationships between the two aspects. We can find that most researches are on theoretical discussion or survey methods. There is little literature through objective financial data and operating data to investigate the effect of supply chain partnership on business performance and financial performance. So I think we can analyze the causal relationship about supply chain partnership and cooperation performance through panel data regression analysis to find out the direction of innovation in this paper.

**Index Terms**—supply chain partnership, cooperative performance, inventory turnover, total asset turnover

## I. INTRODUCTION

With the deepening of market competition and the diversification of customer demand, that the high quality, customized products and services, timely and accurate delivery of the products, faster development of new products has gradually become an important source of competitiveness of enterprises. And all of which cannot do without close cooperation between enterprises and their efficiency. Therefore, more and more enterprises realized that the traditional methods to eliminate competition for the target exclusive competition has not contributed to the success of the company. Only on the basis of cooperation on the competition is conducive to long-term survival and development of enterprises. Therefore, through the establishment of cooperative relations between enterprises seeking win-win situation has become a trend[1]. Therefore, how to measure the quality of the corporate cooperative relationship and how to affect the enterprise performance has become one of the key research focuses.

## II. SUPPLY CHAIN PARTNERSHIP

Supply chain partnership refers to the supply chain organization in a certain period of time through the sharing of information, risk sharing, reducing the cost and improving the quality of service and other measures to improve the performance of the relations between the two sides of a

will[2]. The partnership can coordinate a series of contradictions between supply chain enterprises due to multiple targets and can improve the members in the cost, quality and efficiency, so that many enterprises have committed to the establishment of system of supply chain partners through the effective integration of each other to deal with the complex environment, the transfer of risk and improve business performance.

About the academic research for the cooperation of the supply chain, domestic and foreign scholars have carried out active exploration and research. And now it will review and analyze the relevant theory. At the same time, about the concept of supply chain partnership definition, many scholars have made many statements. Robert J. Vokurka refers that cooperation relationship is the buyers and suppliers for the future cooperation agreement and consensus, including information sharing, benefit and risk sharing. That is to say, the concept of partnership must be based on cooperation and trust[3]. Buzzell, in the description of the cooperation relationship, the buyer and the supplier shall reach an agreement on the relevant matters, and both parties shall form a cooperative vertical integration system in the absence of joint ownership conditions[4]. Dyer J. H. carries on the analysis from the overall point of view, that the relationship is not for cooperation, but in order to achieve the efficiency of the entire value chain. Of course, in order to achieve maximum efficiency, both business transactions and alliances are unique, but not such a relationship with other enterprises[5]. In China, Professor Liu in Tsinghua University by means of combining questionnaire and visiting enterprises, conducted a field survey of Chinese enterprises in the supply chain partnership and the partnership connotation are discussed. She believes that the partnership is not only "risk sharing, benefit sharing" but also including the meaning of "mutual credit", "information sharing" and "mutual difficult"[6].

Although there is no clear definition and clear division on supply chain cooperation, the level of cooperation relationship in supply chain is roughly the same, including trust, communication, commitment, interdependence, adaptation and cooperation. The relationship between the supply chain and the concept of quality evaluation of supply chain partnership refers to the two sides in supply chain relationship in a positive, long-term cooperation degree. Foreign scholars Fynes conducted a more empirical research[7][8]. At the same time, the domestic research is mostly on the basis of it. Lin Jun and others combined with the interview survey of enterprises, selected 5 dimensions of supplier relationship independent enterprises: commitment, information

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sharing, dependence, trust and communication[9]. Liao Chenglin et al in the analysis of different influence factors of cooperative relations, thought the quality of cooperative relationship of supply chain enterprises can be measured from six dimensions: inter enterprise communication, interdependence, commitment, adaptability, collaboration and trust[10].

### III. SUPPLY CHAIN COOPERATION PERFORMANCE

The cooperation performance of supply chain is the result of cooperation among enterprises in supply chain. Through combing the literature and studying the commonness of the literature, generally speaking, it is mainly from the aspects of quality, cost, responsiveness, reliability and flexibility and other aspects to measure. According to different research purposes, different selected indicators will be some changes. For example, Zollo will work performance measurement dimension is divided into direct and indirect performance performance[11]. Direct performance refers to the extent to which both partners achieve their goals. But different enterprises to participate in the motivation of cooperation among enterprises is different, so it is difficult for enterprise cooperation performance directly based on this measurement. Some scholars put forward to realize cooperative target satisfaction as a measure of the characterization index. Indirect performance refers to the competitive advantage that enterprises obtain from cooperation, which can be expressed by the profitability index of the enterprise itself, and can also be expressed by enhancing the competitive advantage of the enterprise. And Chen Zhixiang and others thought cooperative performance will be divided into 4 dimensions of time and flexibility, cost, quality and cooperative orientation[12]. In the analysis of the uncertain effects of SCR conditions on cooperation performance in supply chain, Li Suicheng used the logistics cooperation, the fund and the cost, quality of service, the 3 aspects of the performance description of supply and demand cooperation, in order to analyze the influence of the level of cooperation in the condition of supply and demand cooperation performance[15]. Lin Jun establishes a conceptual model of the effect of SCR on the cooperation performance, measured by direct and indirect cooperation performance, and joined the life cycle and industry attribute 2 control variables. Pan Wenan (2006) believes that the cooperation performance should be divided into profitability, goals, relationship duration and customer satisfaction in 4 dimensions[14].

### IV. THE RELATIONSHIP BETWEEN SUPPLY CHAIN RELATIONSHIP AND SUPPLY CHAIN PERFORMANCE

Domestic and international scholars have studied supply chain relationship (SCR) on the impact of supply chain cooperation performance, such as theoretical research on improving the quality and the performance of agile supply chain. From the existing research results, SCR cooperation and supply chain performance are positively correlated. However, the choice of indicators at home and abroad have their own characteristics, related to the cultural background of the

supply chain, and the focus of the study is not the same.

Effect of partnership on cooperative performance could explain from the transaction cost theory and resource-based theory. The theory of transaction cost thought that partnership is based on mutual trust and mutual cooperation with the contract. So it can reduce transaction costs and increase successful transactions. The resource view theory holds that it is impossible for any enterprise to have the advantage in all types of resources, even the same kind of resources in different enterprises also show a strong heterogeneity, which is a member of resources complementary material basis of partners. Especially some enterprise heterogeneous resources have solidified intangible resources within the enterprise organization. It is impossible to directly access through market transactions, which need to establish long-term partnership between independent enterprises, to achieve the sharing of resources and complementary.

There are also domestic scholars thought that affecting the level of supply chain relationship of cooperation performance mainly from the following aspects. One is reflected directly reduce costs and bring benefits. With the improvement of the level of supply chain cooperation, the coordination activities, adaptive activities and interaction of both sides are more, the cost and supply related costs will be higher in the cost and income structure. But compared to the low level of cooperation, the two sides do not have to pay additional costs to adapt to each other supply, also need not establish inventory to meet the additional risk, and also a preferential price from the other access to resources, thus reducing the direct cost of access to resources and direct transaction costs. To improve the level of cooperation will make the total cost down, but also with the cooperation and expand a market share of the products and the leading technology, which will increase both intangible income. Two is to improve service and product quality, and jointly create the core competitiveness. On the other hand, the enhancement of the cooperative relationship between the upstream and downstream enterprises reduces the opportunistic behavior in the transaction, and also creates a flexible mechanism. The enterprises in the supply chain will be the core technology with high asset characteristics in supply chain organization internal transactions, which is conducive to enterprise decision focus adjustment to the core competitive ability, while the other work of outsourcing. If the core technology can not make it a strong competitor in a specific market, then these technologies must be associated with complementary technologies provided by other members to jointly create core competitiveness. In order to improve product quality and product competitiveness, response to different customer service needs, to bring good benefits to both sides of cooperation. Three is to improve the level of logistics cooperation. Close cooperation can make the two sides maintain a low security stock and high inventory turnover. The supply chain system can be regarded as a multistage inventory system, a node for each participant of the supply chain inventory control system of the multistage and the joint activities and decision-making behavior, if the parties have not sufficient information communication and can not share the inventory information, then the whole supply chain will have

security double inventory.

Therefore, Li Suicheng scholars through theoretical analysis, it is concluded that the level of supply chain cooperation is positively related to the level of logistics cooperation, liquidity, service and quality, and negatively related to the cost level of cooperative performance [13].

At the same time, some scholars have made a lot of empirical research. After analyzing the data of 200 suppliers, Fynes believes that the relationship intensity of a supplier has a significant impact on the performance of the enterprise [5]. O'Toole and Donaldson (2002) [16] has investigated 200 enterprises to analyze the relationship between the performance of enterprises and suppliers. Based on the factor analysis of performance, it can be divided into 21 dimensions, including the financial dimension and non-financial dimensions. Cooperation performance study of this relationship can be used to evaluate the enterprises and suppliers. In addition, Humphreys [17] also surveyed data of 142 enterprises, in the enterprise of a supplier performance improvement 7 dimensions influence significantly in supplier development, including the effective communication and trust. The multiple regression analysis results show that the supplier development, trust and efficient communication has significant effect on supplier performance improvement. The domestic scholar Fu Zhengping [18] also believes that the supplier relationship of enterprise purchasing performance and overall business performance is very important. Their empirical study proved that supplier relationship has a significant direct impact on procurement performance, and has indirect impact on overall business performance. Liao Chenglin and other scholars using 242 companies as the research sample, determining the factors contained in the cooperation between enterprises, they studied the relationship between agile supply chain effect and business performance of the three by factor analysis and structural equation model. It also shows that good corporate cooperative relationship can indirectly influence enterprise performance through the mediating effect of agile supply chain effect. And enterprise cooperation itself, through information sharing, mutual personnel adjustment and organizational structure adjustment to promote the continuous improvement of enterprise performance, which have a direct effect on the level of business performance. Therefore, it can be concluded that corporate cooperative relationship has a significant positive impact on firm performance, whether this effect is direct or indirect.

## V. RESEARCH DIRECTION

Based on the supply chain partners, relevant literature review the relationship between cooperation and performance of the two. We can see that the domestic and foreign research results agree that risk by establishing supply chain partnership can reduce cost, and obtain key resources and enhance the competitive position, which has a positive correlation with performance of enterprise cooperation between.

But most of the research is to explore the theory or survey, there is little literature through objective financial data and operating data to investigate the effect of supply chain

partnership of domestic enterprises, as well as the status of supply chain partnership on enterprise operation performance and financial performance. In China, only Zhao Quanwu [19] and Qian Yanyun [20] for the panel data regression analysis method to examine the causal relationship between supply chain partnership and cooperation between the performance of this problem through the actual business data. Zhao Quanwu taking 27 domestic listed appliance manufacturers as samples, the study finds that supplier partnerships have nothing to do with business performance, and are positively correlated with financial performance, and vendor partnerships are positively correlated with firm operating performance and financial performance. Industry analysis found that there are differences between industries. The reason for the difference is the industry characteristics and the development stage of domestic manufacturing enterprise supply chain management. While Qian Yanyun is listing 26 automobile manufacturing enterprises as the research object, using 2007-2013 panel data, to analyze the impact of enterprise operation performance and financial performance in the automobile manufacturing industry. The study found that strengthen the automotive industry procurement cooperation can significantly improve the inventory turnover rate; while the supply chain control is not conducive to the improvement of corporate performance. In this paper two pieces of empirical research and they are supply chain partnership with top 5 suppliers purchase amount and the top 5 vendors selling amount respectively to measure the enterprise and the supplier and the retailer, the stock turnover rate and net asset yield variables to measure the company's operating and financial performance analysis. It is to analyze the current situation of supply chain partnership and its influence on enterprise operation performance and financial performance.

However, in the related literature, there is no considering endogenous problems of the analysis. The causal relationship between the performance of supply chain partners and cooperation should be further proved by empirical analysis. In addition, the scholars used the first 5 supplier or vendor related to measure the amount and proportion of supply chain partnership, whether this measure representative also needs further study. Therefore, we can take this as the foundation, through a more comprehensive and reasonable variable to measure supply chain partnership. At the same time, to further examine the relationship between supply chain partners and cooperation performance in solving the endogenous problem.

## ACKNOWLEDGMENT

This research was financially supported by following projects from China and Germany: the National Science Foundation of China (71172194); 2015 Hunan's University Collaborative Innovation Project (No.2015/69); German BMBF (No. APR10/810); Social Science Funds Project in Hunan Province (No.2012ZDB13); Chongqing Major Social Science Foundation (No.2004ZD03).

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