

Performance Measurement of Outsourcing Logistics: A Model Development and Implications

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ABSTRACT

Outsourcing logistics or third party logistics (3PL) has become an important source of competitive advantages, increasing the efficiency and effectiveness of a company's logistics function. This paper aims to review research and current 3PL in Hong Kong and to provide ideas for future research. Comprehensive review in the literature has found that the linkage between 3PL service providers and its supply chain partners and 3PL quality performance are required to study further to fill research gap in current literature.

Keywords: Supply Chain, Third Party Logistics, Outsourcing, Performance Measurement

1. Introduction

Logistics and Supply Chain Management (SCM) are the critical factors for firm's success in today's business world as the result of the globalization of the economy and development of information technology [30]. From the Council of Logistics Management, Logistics is part of supply chain process in which it plans, implements, and controls the efficient, effective flow and storage of goods, services and related information from the point of origin to point of consumption in order to meet customers' requirements.

The use of third party logistics (3PL) services providers has gained the benefits above in SCM context. 3PL is defined as the outsourcing of logistics activities to another company [18]. Firms taking this approach employ an outside company to perform some or all of the firm's logistics activities. 3PL firms can provide improved inventory and lead time performance while concurrently capturing economies of scale resulting from higher volumes obtained by aggregating demand across a large number of customer.

Outsourcing of logistics activities to 3PL service providers is widely prevalent in Europe, North America and Australia since 1990s. Also, some studies have focus on logistics issues in Asia Pacific region like Hong Kong, South China, Japan and South Korea [22]. However, it seems to lack of comprehensive studies reported in the literature that have focused on the linkage between 3PL service providers and its supply chain partners in Hong Kong. Thus, this paper provides a review of research and current development of 3PL in Hong Kong and provides ideas and a basis for the future research.

2. Research on Third Party Logistics (3PL)

2.1. Review of Literature in 3PL

There is generally a dearth of literature that deals directly with the strategies and operational characteristics of 3PL. Most of the logistics literature focuses on the management of the logistical function from within supply chain [6,14,24]. Studies that directly address the 3PL tend to adopt narrow scopes and focus on specific areas. Review of the previous literature, three major aspects of research directions has been identified by 3PL. There are:

- Extent of the use of 3PL logistics services
- Decision making process for choosing 3PL service provider
- Impact of the usage of 3PL

In the *Extent of the use of 3PL logistics services*, Lieb et al. [20] compared the experience of the US and European manufacturers in using 3PL services, it identifies that the longer the relationship between 3PL and its supply chain partners, more extensive would be the use of 3PL, higher level of commitment to the relationship on either side and firms would willing to use 3PL services.

Dapiran et al. [9] have presented on overview of the 3PL usage by large Australia firms. The findings indicates that the Australian firms are comparable to US firms in their usage of 3PL services, with more than one-fifth of the firm characterizing their commitment to 3PL as extensive and one quarter of the firms allocating more than fifty percentage of their total logistics cost for 3PL. Moreover, McMullan [21] found that transportation, maintenance and warehousing were among the most outsourced functions among the clients of the consulting group in Asia Pacific. Bardi and Tracey [1] in a survey of the transportation practices of US manufacturers, found that freight bill auditing and payment, and transportation reports were among the most frequently

outsourced transportation functions. Thus, it appears that usage of 3PL service and commitment of resources increases over time as the two parties become more comfortable in their interaction with one another.

Another research on 3PL would focus on *decision-making process for choosing 3PL services*. Firms outsource logistics functions for variety of reasons. Sheffi [25] suggested several reasons for the growth of 3PL in USA. There are need to focus on core business; better transportation solutions; cost savings and improved services; development of necessary technological expertise and computerized systems the following which is beyond the scope of many companies and need for more professional and better equipped logistics services.

Richardson [24] found that 3PL brought about several benefits for the companies surveyed. The benefits included distribution saving, greater control of business, better customer service and satisfaction and the addition of expertise to supplement the capabilities of the internal organization. Other benefits included reduction in capital investment in facilities, equipment and information technology, improved customer service and delivery and reduction in the complexity of logistics operations [7,8,17, 23,24]

As the previous discussions, 3PL is a complex decision, arising out of a variety of reasons. 3PL service providers need to understand the objectives that buyers are seeking to accomplish by 3PL services.

For the *impact of usage of 3PL services on the organization*, 3PL is a strategic partnership between 3PL and its supply chain partners. Before making the decision to outsource, the impact on the organization should be considered. Bowersox [5] indicates that a

necessary imperative for the relationship to succeed is a match between the cultures of the two organizations.

Dapiran et al. [9] found that the impact of 3PL on the internal logistics performance and the logistics costs had been positive among Australia companies. However, introduction of 3PL services into a company represented an important shift in the way business was conducted, related training of the internal staff was found to be necessary.

Also, Dapiran et al. [9] found that the company must plan for the implementation of the partnership by educating the 3PL about the firm's requirements, developing programs to place redundant employees, correcting attitude of internal staff and integrating the information systems of both 3PL service providers and its supply chain partners.

In summary, there is three major aspects of research directions have been identified by 3PL: extent of the use of 3PL logistics services; decision-making process for choosing 3PL service provider and impact of the usage of 3PL. However, it is lack of a sound and comprehensive foundation for the research framework for analyzing the 3PL industry. Also, the quality performance, trends of 3PL service in future and industrial practices in 3PL is required in future research.

2.2. Research on Outsourcing Logistics in Asia and Hong Kong

As growing importance of outsourcing logistics, the extent of its usage has been widely examined in the US and Europe. Sheffi [25] describes how the 3PL industry in the US has developed and mentions several economic, regulatory and technological trends driving the development. Kakabadse studies the trends of 3PL in US

and Europe. It identifies both US and European companies provide the most preferred relationship between 3PL service providers and its supply chain partners who has an industry focused, proven track record.

In Asia, some studies have outlined the linkage between manufacturing firms and 3PL service providers in Hong Kong, South China, Japan and South Korea [22]. In the south East region, it was reported that Singapore based firms are generally satisfied with the services of 3PL service provider [29]. Also, it has a survey of 3PL services in Malaysia [27].

In Hong Kong, academic studies on logistics management in Hong Kong are confined to several commercial reports, consultation papers on specific topics. Wong et al. [33] has investigated the relationships for quality improvement in the Hong Kong supply chain by using theory of co-operation and competition. Voon and Ho [31] studies the economic impacts of logistics infrastructure development in Hong Kong. It concludes that substantial social benefits could be derived from investment in logistics development in Hong Kong. Both public and private sectors will be interested to assess the returns to their investments and to know the impact of their investments on the economy.

However, it is rather limited research focus on either logistics in supply chain context and 3PL in Hong Kong. A comprehensive study reported in the literature that has focused on the linkage between 3PL service providers and its supply chain partners and 3PL quality performance are required to fill the research gap.

3. Performance Measurement of Outsourcing Logistics

Performance measurement is defined as the process of quantifying effectiveness and efficiency of action [28]. In modern business management, performance measurement contributes on business management and performance improvement in the industries. Sink and Tuttle [26] claims that you cannot manage what you cannot measure. Harrington [13] states that “If you cannot measure it, you cannot control it. If you cannot control it, you cannot manage it. If you cannot manage it, you cannot improve it.” Thus, the importance of performance measurement is obvious for management of logistics and SCM.

In management perspective, performance measurement provides necessary information of management feedback for decision making. It plays the critical roles of monitoring performance, enhancing motivation and communication, and diagnosing problems. Moreover, performance measurement provides an approach to identifying success and potentials of management strategies, and facilitating understanding of progress and position. It cannot only assist in directing management attention, revising company goals, but also re-engineering business processes [14,16,32]. Therefore, making proper performance measurement of supply chain is necessary as it cultivates understanding between member forms in the supply chain for performance improvement and implementation [10,11,19]. An appropriate performance measurement is conducive to successful SCM implementation.

According to Beamon [2], there is inadequate literature available in performance measures selection for supply chain management. Beamon [3] categorizes the existing performance measures involving customer satisfaction and customer responsiveness, flexibility and supplier performance. Beamon [2] identifies three types of measures: resources, output and flexibility. Gunasekaran

and Tirtiroglu [12] develops a framework for measuring the strategic, tactical and operational level performance in supply chain, which mainly deals with supplier, delivery, customer service, and inventory and logistics costs.

In fact, logistics and supply chain management concepts have received significant attention in both academic and practitioners for years. Despite this attention, inter-organizational supply chain performance measurement appears to be limited instead of buyer-seller relationship. Keebler et al. [15] surveyed about 3100 logistics executives regarding their logistics and supply chain activities, and concluded that “few if any firms are measuring full supply chain network performance is significant” It implies that the existence of comprehensive supply chain performance measurement system is fewer and insignificant.

Three observations can be made from the literature regarding to supply chain performance measurement. Much attention has historically been placed on individual measures rather than on systems of measure [2]. In addition, many studies in the literature are prescriptive in nature and emphasize the attributes that good metrics and measurement system should have [4]. Furthermore, little empirical research has been conducted to holistic supply chain management system such as outsourcing logistics.

Keebler et al. [15] indicates that relatively few firms are measuring logistics supply chain performance especially outsourcing logistics. In relation to supply chain performance measurement, it has been based on a relatively limited systems perspective. Besides, very little empirical research exists in relation to supply chain performance measurement from a broader system perspective such as organizational performance

measurement.

Although academicians attempt to build new measures and metrics for supply chain management, most of current performance measurement of supply chain has some defects to meet with supply chain management requirements [15]. Current supply chain performance measurement is inadequate because it relies heavily on the use of cost as primary (if not sole) measure, it is often inconsistent with the strategic goals of the organization, and does not consider the effects of uncertainty [2].

Thus, the objective of research which determines the organizational performance measurement of outsourcing logistics in Hong Kong transport logistics industry by using organization theory approach can provide significant information for organizational performance measurement of outsourcing logistics in Hong Kong. It leads to be a better performance of outsourcing logistics service providers in Hong Kong to gain competitive advantages over others and promote Hong Kong as a transport, trading and logistics hub in this and next several decades.

4. Model and Implications

In a serviced partner perspective, outsourcing logistics is expected as a value-added process for those organizations that third party logistics (3PL) is intentionally used to enhance organizational co-operative advantages, in addition to low cost, produce / service differentiation, and focus strategies. However, this expectation may be undermined by lacking measurement of outsourcing logistics service performance to manage service vendors. In a provider perspective, on the other hand, the outstanding performance is expected outcomes of outsourcing

logistics services that should be tangibly and intangibly defined to reflect its operations.

However, there is a dearth of studies in logistics and supply chain management literature to reflect the demand of performance measurement of outsourcing logistics services. Based on literature review, we provide a research framework in organizational theory perspective, to elaborate the causal effect relationships among outsourcing logistics' capacity and services; relationship management with serviced partners, and the outsourcing logistics performance; intending to fill the gap of current literature, and to provide insightful understanding of outsourcing logistics performance measurement and management.

The 3PL capacity and services are examined with respect constructs of tangible logistics services, reliability and responsiveness of services to serviced partners; cost and value-added to service process; the core competency of 3PL service providers; and empathy and adaptiveness to environmental changes.

The relationship management is studied in terms of the commitment of 3PL to serviced partners, the extent of trust and trust development in the process of business collaboration and / or partnership; and 'Guanxi', a social culture or context related issue, in daily business and service interactions.

The outsourcing logistics service performance is investigated in two construct categories: (1) tangible outputs include financial performance, productivity and cycle time of services with industrial benchmark; (2) intangible outcomes involved reputation and goodwill of the 3PL, and the partner's appreciation of 3PL services will be included in the framework.

Hence, a study of organizational performance measurement of outsourcing logistics in Hong Kong transport logistics industry can identify the collaborative relationship among outsourcing logistics service providers and supply chain partners that affect channel relationship in the supply chain and therefore enhance the effectiveness of services delivered. It is imperative that firms have to excel in quality assurance, on which the efficient and effective flows of goods, information and financial within supply chains, it would not only improve outsourcing logistics service quality but also achieve business success.

5. Conclusion and Future Research

Outsourcing logistics has become an important source of competitive advantages, the outsourcing of logistics activities to specialized 3PL service providers can increase the efficiency and effectiveness of a company's logistics function. In order to maintain a competitive advantage, 3PL must enhance its ability to plan, take action and manage and control products, services and information from supplier through customer as an integrated process rather than as a series of discrete functions.

To achieve this, a comprehensive study reported in this paper that has focused on the linkage between 3PL service providers and its supply chain partners. And, future research will be found on change their performance measurement systems of 3PL in order to provide improve its service quality within supply chain.

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