

THE USE OF THIRD PARTY LOGISTICS SERVICES - A LITERATURE REVIEW

K. Dhayanidhi*¹, A. Azad², K. Narashiman³

Abstract: The importance of logistics and supply chain management is increasing in manufacturing companies as they are sourcing, producing and distributing across the world and hence managing their supply chain is getting very complex. However, outsourcing logistics activities such as transportation, warehousing, inplant material handling and other value-added services to experienced third-party logistics service providers enables companies to get customized logistical support while manufacturers focus on the core organizational activities to achieve excellence. The globalization of business and the consequent competitive pressures have placed demand on logistics operations and thus the use of third-party logistics services by manufacturing companies has become a common practice in the last decade. Most of the previous studies in this arena focused on empirical, survey-based whereas this paper presents a literature analysis on the use of third-party logistics services. This study aims at reviewing the articles published in the third party logistics field and offers the existing trends in third party logistics research. A content analysis was made from 50 articles in the literature to access the state of third party logistics research. Also this study explores the sample populations analyzed, different industries studied, research methods employed, data analysis techniques, data sources and level of analysis in the existing research.

Keywords: Logistics Management, Logistics service provider (LSP), Logistics service user, Third-party logistics (3PL).

1. INTRODUCTION

The flow of goods and services across boundaries is imposed due to globalization of business and this has brought many challenges and managing these, in a cost-effective way leads to growth in business. Logistics is one of the key functions for global business and the best way to lower their logistics cost might be to contract their logistics services out to some third-party logistics service providers [1]. Thus the manufacturing organizations realize the importance of their logistics strategies in order to compete in the global environment in the recent years. The term logistics is often

^{1,2} Department of Manufacturing Engineering, College of Engineering Guindy Campus, Anna University, Chennai, Chennai-600025, India. ¹E-mail: dhayaanidhi@yahoo.co.in, ²E-mail: azad@annauniv.edu

³ AU-TVS Center for Quality Management, College of Engineering Guindy Campus, Anna University, Chennai, Chennai-600025, India.

* Corresponding Author: E-mail: dhayaanidhi@yahoo.co.in

misinterpreted to mean transportation alone. But in reality, the scope of logistics issues for manufacturing firms goes beyond the 'traditional' tasks of physical storage and movement of goods. Infact, logistics forms the system that ensures the delivery of the product in the entire supply chain. Business-related logistics services include demand forecasting, documentation flow, inter-firm movements, inventory management, order processing, packaging, parts and service support, production scheduling, purchasing, returned products, scrap disposal, traffic management, warehouse and distribution centre management, and transportation. These services must be planned, coordinated and controlled to maintain the production system [2]. All other efforts at modernization within a company would not bear fruit until the logistics system is carefully designed to facilitate the smooth and efficient flow of goods in the system [3]. Firms are increasingly seeking to treat logistics operations strategically to gain competitive advantage but often lack the competency to run efficient logistics operations themselves. Hence, there is a trend to outsource logistics activities [4].

2. INDIAN LOGISTICS INDUSTRY

The current state of Indian logistics industry has been studied by researchers and highlighted some of the logistics issues and key challenges with the help of secondary information. The logistics issues includes, high logistics cost of operation, focus in reducing cycle times to add value to their customers, regulation of service providers, demand for one-stop customized solutions for value added services (supplier base reduction) and changing government policies on taxation i.e., non uniform tax structures across country and other government regulations [5], [6]. There are several challenges that remains before the Indian logistics sector and some of these challenges are at the firm level while others are at the policy level. At the firm level, the limitation of IT usage to large size firms, lack of trust and awareness as the key hurdles to its growth, whereas at the policy level, the issues of infrastructure and integration of the nation's logistics network remain the two most critical areas that require attention [5], [6]. The important challenge that prevails in logistics industry is dearth of skilled and knowledgeable manpower [6]. Inorder to facilitate the sustained growth of Indian logistics industry researchers have made recommendations for the government to bring all third-party logistics provider/ fourth-party logistics provider under one group, policies and procedures must be simplified, creation of special economic zone/logistics parks/logistics hubs with concession in land and tax rates. [6]. The logistics industry in Asia today is fragmented, somewhat similar to the situation in the USA in the 1990s, with a mix of small and medium-sized logistics players [7]. Now the 3PL market in India is in a fairly growing stage, with multinational companies of all industries being the users of these services from proficient service providers.

3. LOGISTICS AND THIRD PARTY LOGISTICS

3.1 Logistics - Definition

According to Council of Logistics Management, "Logistics is that part of the supply chain process that plans, implements, and controls the efficient, effective flow and storage of goods, services, and related information from the point-of-origin to the point-of-consumption in order to meet customer requirements"[8]. The Council of Supply Chain Management Professionals formerly known as Council of Logistics Management defines. "Logistics management as the part of supply chain management that plans, implements and controls the efficient, effective forward and reverse flow and storage, of goods, services and related information between the point of origin and the point of consumption to meet customers' requirements"[8].

3.2 Third-party Logistics - Overview

Council of logistics management defines third-party logistics in its glossary of terms as “Outsourcing all or much of a company’s logistics operations to a specialized company”. Third-party logistics involves the use of external companies to perform logistics functions that have traditionally been performed within an organization. Third party logistics provider is a firm which provides multiple logistics services for use by customers. Preferably, these services are integrated, or “bundled” together by the provider. They aims to provide one-stop customized solutions to service users. These firms facilitate the movement of parts and materials from suppliers to manufacturers, and finished products from manufacturers to distributors and retailers [8]. Cross-border production chains of manufacturing require coordination and logistics. Third-party logistics services have thus taken this role as a link in the globalization of economic activities. In Singapore the number of manufacturing firms that employ third-party logistics service providers in their production chain as a proportion of the total rose from 8.7% in 1975 to 22.3% in 2000 [9].

3.3 Evolution of Third-party Logistics

The third-party logistics industry evolved in the 1970’s during a time of expanding globalization and an increased use of information technology [10]. These trends resulted in increased demands on firms, and possibilities for companies to operate more competitively in the marketplace. The first generation 3PL’s (1970’s-1980’s) offered services such as transportation, brokerage, and shipping. Second generation 3PL’s (1980-1990) was mostly asset or non-asset based companies with increased service offerings. The third generation 3PL’s (2000 onwards) was mostly web-based 3PL’s with increased supply chain integration.

3.4 Third-party Logistics Services

Nowadays, managers in the manufacturing industries are interested to increasingly outsource logistics functions to third-party logistics (3PL) service providers in order to reduce supply chain complexities, curtail costs and overheads. The important 3PL services utilized by manufacturing companies as perceived by the previous work were inbound transportation, outbound transportation, warehousing, in-plant material handling, freight forwarding, scrap disposal, fleet management, demand forecasting, inventory management, order entry and processing, customs clearance, product labeling, packaging, after sales support, procurement, distribution and channeling [14]-[16], [21]-[23], [29]-[32]. The various activities involved in the different logistics functions given by [11] are mentioned in the Table 1.

Table 1
Logistics Functions and 3PL Activities

Logistics Function	Activities
Transportation	Shipping, forwarding, deconsolidation, contract delivery, freight bill payment/audit, cross-docking, household goods relocation, load tendering, brokering.
Warehousing	Storage, receiving, return goods, kitting
Inventory management	Forecasting, location analysis, network consulting, slotting/layout design
Order processing	Order entry/fulfillment, consignee management, call centre.
Information systems	EDI, routing/scheduling, bar-coding, RFID, web-based connectivity, tracking and tracing.
Value-added activities	Packaging, marking/labeling, billing, call center activities, customization.

4. REVIEW OF 3PL LITERATURE

4.1 Distribution of Articles Reviewed

The 16 articles were studied from the perspectives of third-party logistics service users, another 16 articles from provider perspective and 12 articles from both users and provider perspective. The research methods employed in the reviewed articles includes survey, interviews, case studies, literature review and conceptual theory. Majority of the studied articles were survey based research (27), followed by conceptual theory (8), review papers (5), interview (5), case studies (4) and others (1).

The various data analysis techniques performed in previous researches include chi-square test (9), descriptive analysis (7), cluster analysis (6), correlation and regression analysis (5), factor analysis (2), analysis of variance (1), structural equation modeling (1) and others (4). Literature review includes 14 articles which utilize the sample population of less than 100, whereas about 9 articles used the sample size in between 100 to 200 and 4 utilized the sample size of above 200.

The level of analysis of the articles reviewed reveals that majority of the research work focused at firm level (30) followed by dyad (6), Chain (1) and others (13). The source of data for all the articles reviewed utilizes the industry personnel as respondents, while only one paper sought opinion from logistics experts in education field to identify and understand the relationship between logistics and Supply chain management [12]. The distribution of articles on the basis of research method employed, survey sample population, data analysis technique, and level of analysis, is presented in the Table 2.

Table 2
Distribution of Articles Reviewed

Distribution of Articles	Number of Articles
Perspectives	
3PL service users perspective	16
3PL service provider perspective	16
Both users and provider perspective	6
Others	12
Research Method	
Survey	27
Conceptual theory	8
Review	5
Interview	5
Case study	4
Others	1
Survey Sample Population	
<100	14
101-200	9
> 200	4
Data analysis technique	
Chi-square	9
Descriptive analysis	7
Cluster analysis	6
Correlation & Regression analysis	5
Factor analysis	2
ANOVA	1
SEM	1
Other (e.g. case study)	4
Level of Analysis	
Firm	30
Dyad	6
Chain	1
Others	13

4.2 3PL Services - Users and Provider Perspectives

Literature review reveals that research work on third-party logistics are growing in the last decade across different countries from the perspectives of users and providers. The research studies made in different countries includes, United States [14]-[16], United Kingdom [17], [18], Australia [19], [20], New Zealand [19], India [6], [21]-[23], Denmark [24], [25], Hong Kong [26]-[28], Saudi Arabia [29], [30], UAE [31], Sub-Saharan African nation [4], Malaysia [29], [32], Singapore [9], China [33], [34], Taiwan [35], Bulgaria [36], Thailand [37] and Europe [38], [39]. The major Studies that identify the specific 3PL services used across different countries is presented in Table 3.

Table 3
3PL Usage-users and Provider Perspective

Country	References of Studies
United States	[14]-[16]
India	[21]-[23]
Saudi Arabia	[29], [30]
Australia	[19], [20]
Malaysia	[29], [32]
Europe	[38], [39]
Denmark	[25]
UAE	[31]
Bulgaria	[35]
Sub-saharan African nation	[4]
United Kingdom	[17]

The use of contract logistics services in sub-Saharan African nation is reported in the article [4]. The results indicated that customs clearance service for imported inputs (84.8 %) is the most outsourced logistics activity, followed by carrier rate negotiation (39.1%), carrier selection (30.4%) inventory replenishment (28.3), product assembly/ installation (23.9%), warehouse management/ operations (23.9%), shipment consolidation (21.7%), customer spare parts (15.2%), freight payment (13.0%), order fulfillment (10.9%), logistics information systems (10.9%), product returns (8.7%), order processing (6.5%), fleet management/ operations (4.3%) and others (8.7%) [4].

The use of contract logistics services in UAE is reported in the article [31] and the result reports that more than two-thirds of the firms surveyed use 3PL services to both domestic and international operations, 17% solely for international operations, and 10% for domestic operations alone. Carrier selection (94.3%) is the most commonly outsourced logistics activity, followed by rate negotiation (88.6%), freight payment (84.8%), shipment consolidation (82.9%), logistics information systems (78.1%), order fulfillment (52.4%) and other services. Among firms outsourcing logistics services, 78% employ services of multiple contract logistics firm. Almost 68% of the firms using contract logistics services were satisfied with the performance of service providers, while 26% indicated they were "very satisfied" with LSP performance.

The use of third-party logistics services by large US manufacturers is annually studied and the results are updated. The annual study conducted in the year 1997 by [14] indicates that seventy (69%) of 101 respondents reported that their companies use third-party logistics services and the

most frequently outsourced logistics functions were shipment consolidation (49%), warehouse management (40%), logistics information systems (40%), carrier selection (39%), rate negotiation (34%), relabelling and repackaging (31%). The results also states that 69% of the responding companies use 3PL services for their international operations.

A study conducted in the year 2000 by [15] explores the usage of third-party logistics services in large US manufacturing companies. Results reveals that the most frequently outsourced logistics functions are warehouse management/ operations (59%), direct transportation services 49%, freight forwarding (44%), shipment consolidation (43%), freight payment (40%), customs brokerage (38%), and consulting services (30%), tracking/ tracing (30%), carrier selection (29%), relabelling/ repacking (27%), rate negotiations (29%) and fleet management/ operations (24%).

Reference [16] reported the most frequently outsourced logistics functions by large American manufacturers in 2004. The results of this study states that major outsourcing services includes direct transportation services (67 %), percent, customs brokerage (58%), freight payment services (54 %), freight forwarding (46%), warehouse management (46 %), shipment consolidation (42%), tracking/tracing (42%), carrier selection (38%), order fulfillment (33%), reverse logistics (33%), and cross-docking (33%).

A study conducted by [21] explores the third-party logistics usage in India and the results indicate that more than half of the organizations responded have already outsourced logistics activities such as outbound transportation (55.7%), inbound transportation (52.2%), custom clearing and forwarding (51.5%), outbound warehousing (33.9%), inbound warehousing (29.5%), labeling and packing (29%), fleet management & consolidation (29.1%), order picking (27%) and inventory management (23.5%). The least outsourced functions include marketing sales promotion, assembly/ installation, selected manufacturing and customer service/ support [21].

The survey conducted by [30] compares the usage of third party logistics between manufacturing and service industries in Saudi Arabia and reports significant differences among them. Respondents from manufacturing industries indicate that carrier selection (24.9%) is the most frequently outsourced logistic activity followed by rate negotiation (13.2%), fleet management (14.9%), inventory replenishment (12.7%), order fulfillment (11.7%), order processing (11.7%) and information systems (11.1%), while respondents from service industries indicated that carrier selection (28.3%) has been the most frequently outsourced logistic activity followed by order fulfillment (17.1%), order processing (17.1%), fleet management (11.3%) and inventory replenishment (11.3%). Regarding the satisfaction level of third-party logistics service providers, 83% percentage of users from service sector are satisfied or very satisfied in using logistics services whereas only 74% of the users in the manufacturing sector indicated that they were satisfied or very satisfied in using contract logistics services [30].

Logistics outsourcing practices of UK firms was conducted by [17] and reports that transportation (82.5%) and warehousing (53.0%) remain the main services used by the customers, followed by information services and other value-added services. Around half of the TPL customers (49.5%) were satisfied with the services provided by the third-party logistics providers, followed by those who were somewhat satisfied with the TPL services (23.1%) and those who were very satisfied with the TPL services (20.9%) [17].

A comparative analysis on the level of outsourcing of logistics services by manufacturing organizations in Malaysia and Saudi Arabia is reported in [29]. Respondents indicated that 31% of

organizations in Malaysia and 46% in Saudi Arabia employed contract logistic provider exclusively for domestic operations. 2.4% of the respondents in Malaysia and 8% of organizations in Saudi Arabia indicated that the organizations use 3PL services for international operations. In Malaysia, the most commonly used services are fleet management, shipment consolidation, freight payment, carrier selection and warehouse management, while in Saudi Arabia most commonly used services are carrier selection and shipment consolidation.

Reference [25] conducted a survey with Danish logistics service providers and reports that Outbound transportation is the most common service provided, followed by warehousing. It is interesting that 82.0% of responding firms provide outbound transportation, followed by Warehousing (72.1%), Logistics planning (63.9%), inbound transportation (62.3%), Shipment consolidation (62.3), inventory management and customs clearance/VAT and duty processing were the other services provided by them.

The study made by the [38] reports the survey with Chief Executive Officers of large third-party logistics companies in Europe and provides insight about the service offerings. Logistics information systems, order processing, product returns, relabelling and repacking, shipment consolidation, and warehouse management/operations are the services offered by 100% of the companies included in the survey. Similarly, more than 80% of the respondents indicated that their companies offer customer spare parts, inventory management, order fulfillment, product assembly and carrier selection services. More, than 60% also offer product testing, and fleet management /operations services.

4.3 Length of Relationship with 3PL

Studies have been made to access the length of relationship of manufacturing organizations with third party logistics service provider. A study made in sub-Saharan African nation states that 50% of the respondents had been using the services of 3PL providers for over 5 years, 18% were using it for 3-5 years and 27% using it for 1-3 years. Only 10% stated that they had been using 3PL services for a year or less [4]. A study made in UAE indicates that about 18% of firms surveyed have been using the services for more than five years, 13% between 3 to 5 years, 21% between one to three years and about 48% for less than a year [31]. A study made in India reports that 28.6% of the respondents indicated that they had been using the services of third-party logistics providers for over 3 years, 18.8% were using it for 1-3 years [21].

The annuals studies made in US reports that in the year 1997, 73% were using third-party contracts for less than 3 years in duration and 23% were using 3PL between 3 and 5 years [14]. The users identified in the year 2000 survey reports, 29% had been using 3PL services for 1 to 3 years, 20% for 3 to 5 years and 50% for more than 5 years [15]. Results of the year 2004 indicates that 17% had been using third-party logistics services for 1 to 3 years, 17% for 3 to 5 years, and 67% reported using such services for more than five years [16].

The survey conducted in Saudi Arabia reveals that about 24.1% of firms in manufacturing sector have been using the services for more than five years (39.6% in services sector), 15.9% were using 3PL between 3 and 5 years (14.8 % in services sector), 44.1% were using 3PL between 1 and 3 years (29.6 % in services sector) and about 15.9% for less than a year (16% in services sector) [30]. The survey conducted by [29] reports that 46% of firms surveyed in Malaysia have been using the services for more than five years (30% in Saudi Arabia), 18% were using 3PL between 3 and 5 years (16% in Saudi Arabia), 26% were using 3PL between 1 and 3 years (35% in Saudi Arabia), about 10% for less than a year (19% in Saudi Arabia). The length of relationship with 3PL provider in different countries is presented in the following Table 4.

Table 4
Length of Relationship 3PL

Country	Length of Relationship with 3PL Service Provider			
	<1	1-3	3-5	>5
Sub-Saharan African Nation [4]	5%	27%	18%	50%
UAE [31]	48%	21%	13%	18%
United States [14]	-	73%	23%	4%
United States [15]	-	29%	20%	50%
United States [16]	-	17%	16%	67%
Saudi Arabia (Manufacturing) [30]	15.9%	44.1%	15.9%	24.1
Saudi Arabia (Service) [30]	16%	29.6%	14.8%	39.6%
Saudi Arabia [29]	19%	35%	16%	30%
Malasia [29]	10%	26%	18%	46%
India [21]	-	18.8%	28.6%	

4.4 Quality in 3PL Services

Quality management involves being proactive in performing the right activity, in the right way at the first time, and a commitment to continue to perform tasks to the required level. In logistics and supply chains, this could translate into strategies aimed at making order cycle times shorter and more predictable, as well as maintaining certain levels of in-stock availability and specific fill rates on customer orders [37]. Rising customer expectations and intensified competition have put pressure on LSPs to improve the quality of their services. This has led many LSPs to implement quality management systems (QMS) for quality improvement of their service offerings and studies have made in Bulgaria to explore logistics organizational developments and logistics management practices [36]. Research studies have been done to the access the quality performance criteria for evaluating the logistics service providers [40].

A research study examined the factors that encourage logistics firms in Hong Kong to implement QMS to ensure quality in their work processes. Based on a case study, a ten-step approach for QMS implementation is introduced, and discussed the cost and service advantages achieved in the firm. Also this approach offers procedural guidelines for firms which plans about the implementation of QMS [27]. This study defines logistics service quality, the extent to which quality management practices and tools that are employed in logistics and manufacturing firms, and barriers to the implementation of quality improvement processes in logistics services of logistics firms and logistics service recipient firms. This study also focused to determine the level of integration of quality programmes into the corporate goals, usage of quality practices in logistics functional areas to identify the different methods used to benchmark performance against customer expectations [27].

Reference [20] investigates the status of quality management practices in logistics and compares the extent of quality practices between manufacturing and logistics companies in Australia and found that on-time delivery is the primary factor that identifies quality in logistics.

Logistics Service Quality (LSQ) represents a concept of service quality in logistics, which consists of technical and functional quality of services provided by TPL providers. Seven semi structured interviews conducted by [18] reveals the critical importance of functional quality in

driving customers' satisfaction as compared to technical quality. Satisfaction in the LSQ reflects the satisfaction with the core service and satisfaction with the organization [18], [41].

Reference [42] discusses recent developments in measuring logistics service quality and incorporates a technology acceptance model (TAM). TAM is to assess logistics information technology use and acceptance as an essential component of an expanded model of LSQ. The results of empirical test provided evidence of approximately equal relationships between these two main TAM constructs such as perceived ease of use (PEOU) and perceived usefulness (PU), whereas previous studies reports that PU is more stronger than perceived ease of use.

4.5 Information Technology Usage by 3PL

The success of logistics outsourcing relationships is entrenched in the third-party's technological ability. In a highly competitive industrial environment characterized by "time compression", logistics service providers and recipients must maintain very close ties to recent technologies, particularly information sharing/technology [43]. As an increasing number of firms are seeking to outsource their logistics businesses to 3PL providers, IT capability has become a critical factor for 3PL providers in obtaining business from logistics users. IT capability significantly affects three important dimensions of the competitive advantage of these firms, namely, reducing costs, providing innovative and customized services, and improving service quality [33]. The main reasons for the success of logistics industry in Singapore are its simple and efficient management system, modern facilities and the application of IT [9].

A study made by [23] with 3PL service provider in India reveals that 78% of the respondents use mobile communications, followed by EDI (56%), bar coding (31%), satellite-based tracking (9%), GPS (9%) and GIS (3%) [23].

A study made at Hong Kong reveals that the communication technologies (EDI, the Internet, intranet and email) were currently used to support the management of logistics among all parties in the supply chain. Since about 69% of the surveyed companies had an international coverage in their business operations, more than half of the logistics companies used data communication technologies to keep in touch with their suppliers and customers, as this is the most efficient and effective way of doing so [28]. Another study in Hong Kong reports the importance of logistics in global competitiveness and developed the conceptual framework for e-logistics based on a literature survey. Also a case study is conducted with a logistics company to present a tool for determining the IT framework necessary for IT integration and support of the business partners and highlights the reasons behind the success of e-logistics, that is, internet-enabled logistics value chain operations [26].

Research work was carried out to provide a mechanism for managers to use when they need to provide justification for logistics information technology (LIT) expenditures [44]. Their focus is to determine the possibility of categorizing LIT into two constructs namely internal and external LIT and examined the relationships between internal and external LIT and customer-related performance capabilities. Results indicate that internal LIT positively impacts individual performance capabilities such as low cost logistics, order fill capacity, inventory turns, information systems support and external LIT positively impacts individual performance capabilities such as product flexibility (customization), delivery dependability, responsiveness to key customers, order flexibility, delivery time flexibility, advance shipment notification and customer satisfaction.

Studies conducted in USA found that users of third-party logistics services rely upon their providers for IT support and indicate that IT support is needed for freight payment services (56%), transportation planning/ optimization (40%), warehouse management systems (38%), shipment tracking (38%) and international documentation (37%). Results indicate that the users rely most heavily upon their 3PL providers to operate their software/systems and to implement new software and systems and less heavily upon them for market information about new software/systems and redesign of their existing software/systems [15].

In China, a study made by [34] develops an empirical taxonomy for information technology strategy variables (IT importance, IT effort, and IT involvement) for third-party logistics firms. This study provides relationships between information technology strategy, IT advantage, competitive advantage, and the financial performance of 3PL firms and provides insights for managers in the development of information technology strategies in third-party logistics companies.

4.6 3PL Selection Criteria

Once the decision has been made to work with a 3PL, the next step is to choose the proficient logistics service provider. The selection of third-party logistics service provider is a complex process involving various criteria, which are often in conflict with one another, such as price, quality, service, technology, etc. Thus, the selection of an efficient third-party logistics service provider to strengthen the relationship with LSP becomes a crucial decision [11]. The strategic position of logistics service provider in order to cater the needs of future must be analyzed during the selection process and the strategic position of logistics companies in Finland is studied by [45].

Reference [46] examined the role of a third-party logistics provider by looking at services from the practitioner's perspective. This study presents the nine important steps that should be followed to successfully select a third party logistics provider and also an interview that was being fairly representative of others. The interview results indicate that service and flexibility are the main reasons to use a third party logistics provider and any size company can benefit by using logistics service providers.

In a survey conducted in India, logistics service provider were asked to rate 10 key success factors based on their perceived importance levels and firms' achievements. It is found that breadth of services and customer focus were given the most importance, 96.77% respondents marked them as either "high" or "very high", followed by availability of skilled manpower (93.55%), investment in information systems (90.32%) and integration of supply chains (90.32%) [28]. Thus internationalization, industry focus or specialization, investment in information systems, availability of skilled professionals, and integration of supply chains stand are the most important factors for success as a third-party logistics provider [13], [22].

4.7 Benefits/Reasons to Choose 3PL by Geography

A review of the literature reveals diversified benefits on the outsourcing of logistics services to 3PL service providers [6]. Study made in UK reports that cost-related factors seemed to be the top priority among the customers, over service-related factors while outsourcing logistics services. More than half of the respondents perceived that reducing logistics costs (56.3%) and avoiding investments in a non-core activity (54.6%) were the main reasons for outsourcing [17]. Studies made in USA found the major reason for outsourcing were cost reduction followed by the ability to focus on the company's

core business, greater flexibility, improved operational efficiency and improved expertise and access to data [14]

The benefits obtained in outsourcing logistics services as perceived by respondents in United Arab Emirates and Sub-Saharan African region were efficiency of service provided, followed by time and cost savings, improved customer service, and availability of credit terms on freight payment. Other benefit includes better utilization of firm's human resources and superior cargo handling and delivery [4], [29]-[32].

The most frequent benefits of logistics outsourcing reported from respondents in Malaysia were time saving, cost savings, improved customer service and freight payment/credit terms, whereas respondents in Saudi Arabia cited cost reduction, improved expertise and reduction in capital deployment as the major benefits from logistics outsourcing. Improved customer service and more effective utilization of firm's human resources are the important benefits as perceived by users in Saudi Arabia [29]. Other benefits reported by them include improved customer service and a more effective utilization of firm's human resources [29], [30].

In a survey conducted in India, respondents ranked the top five reasons for using the services of 3PL providers. 80.6 % of the respondents state that logistics cost reduction is an important reason for outsourcing. 76% of the respondents use services of 3PL in order to concentrate on core competencies followed by improved customer service (71.3%), improved return on assets, increased inventory turns and productivity improvements [21]. The benefits of using 3PL services as are summarized in Table 5.

Table 5
3PL Usage-Benefits and References

Benefits	Supporting References
Reduction in logistics costs	[4], [17], [21], [29]-[32]
Efficiency of service	[14], [21], [29]- [32]
Improved customer service	[14], [21], [29]-[32]
To avoid investments in non-core activity	[4], [29]-[32]
Time saving	[4], [29], [31]
Superior cargo handling and delivery	[4], [31]
To focus on the company's core business	[14], [21],
Greater flexibility	[14]

4.7 Previous Reviews

Reference [47] reviewed a total of 152 articles published between 1989 and 2006 in 33 reputable international journals and classified into content and methodology related issues. Findings reports that involvement in 3PL arrangements, especially cooperative, partnership-like relationships, can result in multiple economic, organizational and financial benefits for shippers such as reduced logistics cost, improved service levels and end-customer satisfaction, improved access to and application of technology, reduced capital investment in facilities, equipment and manpower, increased flexibility and productivity, improved employee morale, increased access to wider markets and new competencies.

A study identifies 45 articles in the 3PL literature and examines topics, methodologies, and identifies several directions for future research in the field. This study identifies that there is a greater need to study the theoretical models using hypothesis testing. Only few researches in 3PL have assessed multiple geographical regions simultaneously whereas much of the existing research assessed one geographical region and hence there is a need for extended geographical scope in 3PL research, especially in Asia and in China. Researchers should look forward to repeat research projects, especially if the same participants can be assessed each time in order to assess trends and challenges in the industry [48].

Reference [49] reviewed 442 papers on the state of logistics and SCM research and identified potential gaps in this field and suggested that, future research should concentrate at developing countries since they are becoming either sourcing centers or markets of MNC's, necessity about the incorporation of other discipline theory, lack of research at inter-organizational level, deficient in hypothesis testing of Supply chain management, too little innovative secondary data application. A total of 114 academic sources was retrieved and analyzed by [50] in terms of research purpose and nature, method employed, theoretical approach and level of analysis in 3PL research. A variety of benefits and risks in relation to 3PL is reported and summarized the success factors for 3PL partnerships. Finally this study identifies that, future research should focus along the network, theory based, normative and the empirical studies to design and implement 3PL [50].

5. CONCLUSION

This study attempts to contribute to the 3PL literature by reviewing 50 articles in this field of third party logistics research. This paper investigated the research methods employed, sample populations analyzed, data analysis techniques, different industries studied, data sources, level of analysis and the use of third party logistics services across different countries in the articles reviewed.

This findings of this literature review supports that majority of the articles in 3PL research were survey based and focusing at firm level. This study also explored the various services outsourced from users and provider perspective, length of relationship with 3PL, importance of quality while providing 3PL services, necessity of information technology usage in 3PL activities, selection criteria for 3PL providers and benefits/reasons to choose 3PL.

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