

Determinant Factors of Supply Chain Services Demand

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Due to increased globalization and its subsequent rise in competitiveness, the role of supply chain services (3PL) in managing logistics, reducing operational and non-operational costs, and managing customer and supplier relationships, have become of utmost importance.

logistics

supply chain

sustainability

sustainable supply chain management

sustainable logistics practices

3PL services

1. Logistics and Sustainable Supply Chain Management

Logistics describes the component of SCM that organizes, executes, and oversees the successful and efficient movement of supplies, goods, and data across the whole supply chain ^[1]. As a result, logistics management is operational in definition, whereas supply chain management is conceptual. To effectively satisfy the consumer, supply chain management is primarily concerned with customer service enhancement as well as cost minimization ^[2]. In the past few years, supply chain firms have attempted to behave greener and provide customers with environmentally friendly commodities and services. This situation has resulted in the birth of the green supply chain, which tries to emphasize methods that cause a supply chain to operate in an environmentally friendly manner.

In the setting of supply chains, one can apply the concept of all three growth foundations, including the ecosystem, economics, and society, all of which are critical factors in establishing global sustainability ^[3]. Sustainability involves guaranteeing the long-term viability and continuation of company operations whilst improving the foreseeable wellness of the entire system. Sustainability encompasses many more challenges than environmental degradation, which is sometimes conflated with it, like contamination, the conservation of resources, and elements of human existence including welfare, health, etc. ^[4].

The figurative recognition of the environment and business as interrelated structures that, when possible, preserve and recycle supplies and, as required, resist difficult conditions ^[5], is critical. Fiscal variables have an impact on the probability of finding natural resources and the pace of utilization of their novel supplies, and higher costs stimulate the development of mining and reclamation work ^[5]. Because of the rising scarcity of assets, supply chain firms have emerged that are involved with components for reuse, returned items for health or safety concerns, recycling,

and goods for restoration [6]. Therefore, it can be noted that many factors related to the internal and external environment of supply chain firms tend to impact the demand for their services, affecting their sustainability.

2. Demand for 3PL Services

According to Zailani et al. [7], the majority of companies outsource logistics to decrease operating costs (82.4%), enhance operational flexibility (52.9%), boost their firm's dedication to fundamental competitive strengths (49.0%), enhance productivity (49.0%), and boost the quality of the logistics activities (37.3%). The assignment of some supply chain activities to an exterior entity is referred to as logistics outsourcing (3PL). Outsourcing entails foreign businesses doing conventional logistics activities in a company, whereas all logistics procedures are operated by 3PL service providers [8]. Firms have decided to outsource either a portion or all of their supply chain functions to gain operational advantages in the supply chain and concentrate on their primary corporate operations [8]. According to Al-Marsy et al. [9], 3PL service providers could analyze their operational effectiveness (alongside location-related efficiency) and utilize the information to advise their customer enterprises in making strategic choices. In a larger sense, logistics activities encompass shipment, vehicle management, storage, recall and reverse logistics, packaging, shipping payments, and oversight [10]. Transportation services are among the most often outsourced. National transportation (80%), storage (66%), global shipping (60%), freight forwarding (48%), customs clearance (45%), and reverse logistics (34%) are the logistics operations commonly outsourced worldwide [11].

While cost is a primary motivation for outsourced labor, several other variables should be considered before the organization may take this step. Corporations are unlikely to outsource an advantageous operation or a process in which they hold a particular understanding or fundamental skill. It seems naive to be giving out this kind of knowledge [12]. The clients of 3PL services show that the fields in which logistics operations could provide an edge over their competitors are lower logistics costs, boosted satisfaction, exceptional performance in achieving objectives, utilization of a broader extent, and effective inventory control [12].

The planning and oversight of 3PL service providers is essential for ensuring profitable outsourcing choices [13]. The higher the risk that the customer senses, the more crucial the former becomes. Some of the most important variables of logistics outsourcing are costs, planning, key expertise, regulations, ambiguity, information technology, and enduring relationships [13]. Furthermore, several additional factors have been uncovered by other investigators. Excellent service, risk management, adaptability, expertise, and elegance are examples of these.

Businesses using a strategic outsourcing perspective seem to put greater emphasis on boosting flexibility, following cost elements, to the benefit of 3PL service providers' skill to adapt to shifts in demand, while placing a lesser emphasis on enhancing client service and the ability for breakthroughs [14]. Based on the findings of the same study, even though it is mentioned in the research as being one of the essential factors for choosing 3PL services, sustainability was not judged to be extremely relevant. To this point, it should be highlighted that the various activities performed by the government, like the pricing and tax policies, could affect directly the demand for supply chain services, as well as the sustainability of the firms [15][16].

3. Determinant Factors of 3PL Services Demand

Partnering with a 3PL service provider versus internal logistics outsourcing is driven by a variety of considerations unique to every firm. Growing customer demand for additional services, enhanced visibility across budgetary limitations, elevated restrictions, fluctuating market situations, and storage challenges have placed companies under severe stress, and thus 3PL service providers with tailored company solutions have become critical for delivering performance [17].

A rising factor with a significant impact on business operations is unpredictability, regardless of the firms' declarations of advancement in a broad range of logistics operations [18]. 3PL services have become critical for logistics management due to the numerous advantages they offer, including increased efficiency, improved client service quality, lower managerial, staff, and property expenditures, and reduced facility and equipment impact [19]. The quality of logistics services supplied by a 3PL service provider impacts the procedure of selecting an appropriate partner. Service quality is related to the service provider's service efficiency and expertise, as well as the assessment of its services [20].

The price and the standardization of 3PL services seem to be major factors in enterprises' decisions to choose and/or extend their collaboration with 3PL service providers [21]. Quality, duration, flexibility, and expenditure have been identified as important criteria too [22]. Other parameters that affect the demand for 3PL services are logistics costs, service quality [23], connectivity, monitoring and transport capabilities, the timeline for delivery, technological infrastructure, overall earnings, geographical reach, and a variety of offered services. According to Soh [24], the most significant efficiency factor is an excellent grasp of information technology (IT), followed by funding, quality of service, international associations, administration, and equipment.

Bulgurcu and Nakiboglu [25] discovered that five of the most commonly cited factors for the on-demand drivers for 3PL services are costs, compatibility, IT operation and service quality, asset possession, and operational factors. To thrive and preserve their competitive ability in the market, companies must compete with one another for the opportunity to acquire the needed essential assets while offering adaptable and rapid services in the supply chain, which is feasible by using either corporate oversight or supply chain network oversight [26]. The capability of a robust transportation system, quality accreditation, safety and health, excellent service, and sustainability credentials, and other factors that need the highest consideration of corporate decision-makers, are among the most significant and inspiring of these aspects [27].

Combining the aforementioned factors, **Table 1**, presented below, displays the factors determining the selection of 3PL services [25]:

Table 1. Demand factors for supply chain services (3PL).

General Factors	Subfactors
(1) Costs	(a) Price of the service (b) Continuous effort to cut costs

General Factors	Subfactors
	(c) Flexibility of payment
(2) Quality of Service	(a) Customer satisfaction (b) Operational performance based on the speed of execution (c) Operational performance based on delivery time (d) Operational performance based on accuracy (e) Problem-solving capability (f) Customer orientation
(3) Competitiveness	(a) Coverage of functions (b) Geographical coverage of processes (c) Ownership of assets for operations (d) Technological infrastructure for operations (e) Sufficient capacity (f) Flexibility (g) Information technologies, information technology capabilities
(4) General characteristics	(a) Location (b) Standardization (ISO, etc.) (c) Reputation (d) Experience (e) Financial stability (f) Environmental sustainability (g) Safety and health
(5) Relationship Factors	(a) Cultural compatibility (b) Relationships with customers (c) Willingness to share information

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