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The Barriers for Iranian Retailers to Outsource Their 3PL Activities

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Abstract

The importance of supply chain management and its related complex activities has been widely noted recently. Many companies desire to enter the international market in today's competitive environment, and logistics could be a significant strategic tool as well as information source. On the one hand, the emergence of third-party logistic companies have solved many of their entry problems and accordingly gained a great deal of attention. On the other hand, there are many barriers that, despite great need, stop companies from trusting and outsourcing their responsibilities to another party. This paper has surveyed retailers about their problems with outsourcing their logistics activities. While some factors such as a problem in the coordination are not considered important by the retailers, there are some interesting issues like law barriers and the absence of good review that would stop them choosing a third party to handle logistic activities.

Keywords

Supply chain management; Third party logistics; Outsourcing; Production

1. Introduction

Supply chain process includes a multitude of actions from creation to consumption. In the supply chain, the flow of goods is from the production chain to the consumption chain while the flow of money is from the consumption chain to the production. The flow of information and value, however, is mutual. The competitiveness of a product depends on the performance of these three flows in the supply chain organization. The competition rate is growing quite rapidly in the Iranian market, and it has shifted from the level of individual firms to the supply chain and prevailing business environment throughout the industry. There are various factors as to why the concept of Third-party Logistics (3PL) has not been fully taken advantage of in Iran. In this research, we firstly look at the concept of 3PL as a whole. Then we consider the challenges facing third-party companies in Iran. Finally, this paper explores the main barriers for retailers, in Tehran, the capital city of Iran, to outsource their supply chain activities to a third party and to choose a reliable 3PL partner.

2. Literature review

2.1 Types of logistics service providers

Several definitions of the supply chain have been provided. Generally, the supply chain is the set of all firms that directly or indirectly contribute to accomplishing the consumer's demands [2]. In recent decades, manufacturers have found that, to gain competitive advantage and to survive in the global competition, they should focus their attention on production, costs reduction, improving the service level, and outsourcing their logistics activities. The establishment of companies providing logistics services and assigning logistics

operations to them is one of the most important measures that can help industry and enterprise owners [10]. During the previous decades, there have been a vast number of definitions with regards to the nature of 3PL as a concept and the providers of these services. Some of these definitions are mentioned below.

According to Lieb [23], “3PL is concerned with the use of external companies to carry out logistic tasks which have been previously carried out within the firm. The tasks carried out by the third party can cover the whole logistics function or specific tasks within the process”. Berglund et al. [4] (1999, p.59) defines Third party logistics as following:

“functions taken care of by an external service provider on behalf of another firm which is consisted of at least the management and execution of transportation and warehousing processes.”

Furthermore, the duration of cooperation between the two firms should surpass one full year for the service provider to be known as a 3PL company, otherwise it is considered as ‘arm’s length’ sourcing of transportation or warehousing. Evangelista and Sweeney [12] (2006, p. 56) define the outsourcing in logistics as follows:

“Third party logistics are functions which are taken care of by a logistic service provider on behalf of a shipper and is consisted of, at least, the process of transportation.” The concept of service offering in 3PL can also include various functions such as warehousing and the management of inventory, in addition to activities linked to value added supply chain and information. The 3PL industry is quite vast in size, therefore it is worth studying on its own. The academic attention in the field of 3PL has been increasing in the past decade. This is basically due to the increasing interest of firms in outsourcing most of their functions which are non-core activities [33].

Various organisations, with the outsourcing of many of their public services, reduce the need for investment and asset creation within their firms [38]. As an example, an organization with outsourcing of their warehousing to 3PLs does not need to invest heavily in warehouses and refrigeration facilities. Meanwhile, the organization can use a 3PL service to direct a part of its capital rather than deploying assets to advantaged sectors. As an example, the organization, with the assistance of the transport fleet, no longer needs to invest in the purchase of transportation vehicles. 3PLs assists the company to maximize their capital and properties for storage. Failing to do so would lead to the loss of many corporate savings, because the warehouse or refrigerator of the firm is not always fully utilized. Therefore, part of these assets will be underutilised and will even result in fixed and current costs (repair, maintenance, old age, depreciation, etc.). However, with the outsourcing of services to 3PLs, the costs mentioned above are withdrawn from the responsibilities of the organization [17].

Deciding upon the most eligible 3PL service provider has become a rather demanding task for many international companies. The selection of the most suitable service provider begins with correct establishment of the right criteria for the identification and evaluation of the right 3PL service provider company. These firms should have the highest potential for meeting the requirements and standards of service buyers [5]. Complex or multi criteria decisions related to the selection of the service providers with the most potential, is mainly related to the reasoning and the experience of the management team in charge of the selection process [9], [19]. Taking into consideration various multifaceted decision-making issues, hand picking of 3PLs service providers can be a multiple-criteria decision-making task (MCDM) [26]. While evaluating 3PL service providers, managers usually face a certain level of uncertainty, and the amount of input data is not accurately clear [28].

As mentioned earlier, the decision-making process is always accompanied with uncertainty. The uncertainty factors are usually expressed in the form of interval numbers, rough numbers, fuzzy numbers, and grey numbers [17]. These are mostly suited for the presentation of uncertainty, linked to qualitative criteria by taking advantage of the linguistic scales and determining how reliable the expert’s evaluation is [35]. The

idea of applying algorithms in the process of decision-making supported by the interval approach, mainly implies that interval numbers are being used for the presentation of attribute values [13]. However, it is a rather demanding task to pinpoint the limitation of interval numbers, due to the fact that they are mainly based upon the intuition, experience and the perception of the managers in charge of the decision-making processes [29].

Studies show that the service level of 3PL companies is increasing every year. Also, 3PL users utilize participatory collaboration which serves the third-party logistics service companies to improve performance and enhance their level of collaborations [14].

Based on the concept of dynamic capability, to gain a long-lasting competitive advantage, companies which are competing in active markets, should be obtaining, intergrading, reconfiguring, and releasing resources [18], [24]. These factors in dynamic capabilities, precursor various norms and routines which companies develop for the purpose of value creation, aiming at better and more efficient responses to various forces within the market. The learning orientation of a company can directly influence their efficiency in adapting both effective and timely routines [36]. Although researchers have conducted various studies on learning orientation and its role on competitive advantage, [8], [14], [16], [32], [39], its influence on outsourcing of logistics remains largely unexplored [7]. Panayides [30] provided a substructure on how a company's learning could lead to a successful link between logistics service providers and their service buyers. However, for 3PL companies, knowledge sharing, as a leading process for organization learning, is one of the biggest barriers for adoption of such services [31].

Due to reduced product costs, efficient logistics infrastructure leads to the prosperity of both producer and consumer. On the other hand, improving logistics in geographically suitable countries help them earn more income and increase employment rates. Currently, the improvement of the status of countries in the field of logistics has become one of the major goals of economic development. Since the inappropriate situation of the logistics network in each country increases business costs and reduces the ability of countries, especially developing countries, to join the global supply chain, policymakers consider essentially the implementation of coherent and sustainable policies to strengthen and integrate the supply chain and the improvement of the logistics situation not only in the best countries in the field of logistics, but also for emerging countries as an engine for growth [25].

2.2 Current situation in the 3PLs services market in the world

Globalization as a concept has fundamentally and permanently altered the business environment. In response to this recent economic norm, various producers and suppliers have recognised 3PL companies as crucial players in the process of the supply chain. As dedicated logistic specialists, these companies enable their customers to concentrate on their core functions and areas of expertise [34], [40] and this focus ultimately lead to the improvement of the competitive advantage of the firm [1], [6], [20].

The concept of customer and supplier relations has been challenged dramatically by the interdependence created due to outsourcing [22], [37]. Based on the seminal work of Morgan and Hunt [27], competition is included as the main characteristic of any free market. However, one can claim that commitment and trust are absolute necessities for the maintenance of a successful committed business relationship. In these convoluted and reciprocal relationships, the concept of success or failure depends on the presence of honest collaboration and the lack of opportunistic behaviours. Based on various literature, trust is one of the main factors in the promotion of cooperation and leads to a higher rate of data sharing amongst various interdependent parties [11], [15].

2.3 Challenges facing third-party companies in Iran

In previous sections, the position of 3PL companies in improving business conditions has been reviewed. It highlights the importance of developing these companies in Iran. However, the specific conditions and characteristics of Iran, examples of which are given below, make the issue more relevant:

- Positioning in a strategic place due to geographical location: These conditions have enabled Iran to become a logistical link between Asia and Europe, on the one hand, and a communication link between the countries of Central Asia and the Free Seas on the other. This special position is an advantage, which if properly addressed and effectively used, could generate revenue way beyond the revenue produced from oil [11].
- Definite need for active participation in international markets: Due to the policy of non-reliance on oil revenues, which is one of the main strategies for the country's economic development, it is necessary that domestic products are offered at world-class quality and price. This is rather an impossible task to accomplish without proper and optimal logistics infrastructure [21].
- The need to reduce prices: Due to recent economic trends in the country and rising prices of energy carriers, and consequently an increase in raw material prices, the cost of products and services has increased significantly. Undoubtedly, by optimizing energy consumption, raw materials or, in other words, increasing resource efficiency, the impact of these factors could be significantly reduced. This issue is the main priority in various industries and organizations [2].
- Supply and supplier related issue, fragmentation, reliability in delivery, flow of information, systems for the management of quality and inventory, disruption of customer service, processes of research and development, workers' skill level, planning, costs related to production and waste management, fiscal management, currency rates, logistic, demand, and regulations are some of the main topics which are considered the many risks for manufacturing companies in Iran [21].

2.3.1 Sanctions against Iran

Sanctions against are imposed by global powers to punish Iranian government or to persuade this country to give up some activities. Most of the sanctions against Iran are formed after the occupation of the U.S embassy in Tehran in 1979 and they are intensified with the challenge of Iran's nuclear program. Iran's atomic program has faced many sanctions in 2016, after the referral of the case from the atomic agency to the security council. Sanctions against Iran can be divided into two-four general groups based on the countries that impose the sanctions: multilateral sanctions such as sanctions of the security council, sanctions of the European union, unilateral sanctions of different countries such as U.S and sanctions of the U.S congress. In the current age, the economy is considered as an important basis of wealth and power production and a basis to reach growth and economic development. This has attracted the attention of Iranian policymaker and there have been many economic plans to reach economic development. In this regard, economic sanctions are the main barriers to reach this goal. Sanctions have targeted a large section of Iran's economy and have limited access to financial resources and currency, have reduced investment, have increased inflation and unemployment, and finally have reduced economic growth.

Iran's economy will face a burdensome crisis under the influence of the U.S sanctions if the European Union does not cooperate with Iran (and it seems E.U is not willing to cooperate). Iran's oil export will face negative growth. The policy of oil for goods is the government's policy with other nations. Of course, given the government's policy to get dollar prices closer it's a real value, we will witness higher export for full national production that can somehow cover negative growth of the oil productions. Unfortunately, Iran will again

face two-digit inflation. The concern here is that the country will again enter stagnation and the only possible solution is to use policies to increase export [31].

2.3.2 Logistics in Iran

There are 3 major players when it comes to logistics in Iran. These players are Government and governmental related organizations which hold 60% of the shares. Academia holding 25% and operating companies which hold 15% of the shares. Each of the mentioned sections contain several subsections which are stated below:

Government

- Road Development Ministry
- Organization of transportation and maintenance of roads
- maritime corporation
- Civil aviation corporation
- Islamic Republic of Iran's railway

Operations

Shipping Lines of the Islamic Republic of Iran

- Port of Sina
- Middle East's Tidewater
- TukaRail Co
- International Transportation Co. of Persian Gulf
- Iran's Tosse Tarabari
- International Transportation of Iranian Chain
- Kaveh Co
- Sepahan Co
- Iran Air corporation
- Logistics Holding of Khadem
- Aras Asia Seir Co

Academia

- Logistics and Supply Chain Society of Iran
- Imam Hossein University Logistics Study and Research Centre
- Trade Studies and Research institute

Unfortunately, due to the political structure of the country, even though the government of Iran holds only 60% of the shares of the logistic industry, it still has a very high influence on the rest of the shareholders. Iran has many advantages and potential in the field of logistics, of which the most important are the Middle East and the main five major corridors of transit and international transportation, the use of all modes of transportation, access to high seas, having blue shores and extensive land borders, having numerous ports and extensive road network. Due to these advantages, the country has the ability to become one of the major commerce centres in the region and even the world, but unfortunately, so far, the development of logistics in the country is not been significantly taken into consideration. Looking at Iran's position in the indicators related to the field of logistics is a good express of the country's weakness in this regard and the lack of development of the logistics infrastructure.

2.3.3 International logistics in Iran

The Logistic Performance Index (LPI) is focused on a global survey of operators (global freight forwarders and express carriers) who provide input on the “logistic friendliness” of the countries in which they work and trade. They incorporate in-depth knowledge of the countries in which they work, comparative evaluations of other countries in which they deal, and global logistics expertise. Quantitative data on the success of main components in the logistics chain in the country of work is combined with feedback from operators. As a result, the LPI includes both qualitative and quantitative indicators, and it aids in the creation of logistic friendliness profiles for these countries. It assesses success across a country's logistics supply chain and provides two perspectives: global and domestic. The LPI overall score reflects expectations of a country's logistics based on the reliability of customs clearance, the consistency of trade and transportation-related facilities, the convenience of organizing competitively priced imports, the quality of logistics providers, the ability to track and trace consignments, and the pace at which shipments arrive at the consignee on time. A higher score indicates better results. The index varies from 1 to 5, with a higher score indicating better performance [25].

Table 1. Logistic Performance Index in Iran and other sectors of world

COUNTRY	LPI SCORE	CUSTOMS	INFRASTRUCTURE	INTERNATIONAL SHIPMENTS	LOGISTICS COMPETENCE	TRACKING & TRACING	TIMELINESS
Region: Europe & Central Asia	3.03	3.16	3.14	3.17	3.24	3.62	3.23
Region: East Asia & Pacific	2.98	3.02	3.08	3.07	3.12	3.54	3.14
Region: Middle East & North Africa	2.6	2.78	2.96	2.81	2.86	3.29	2.89
Region: Latin America & Caribbean	2.48	2.46	2.69	2.6	2.67	3.05	2.66
Region: South Asia	2.42	2.45	2.68	2.56	2.56	3.03	2.62
Region: Sub-Saharan Africa	2.36	2.29	2.49	2.42	2.39	2.84	2.47
Iran, Islamic Rep.	2.6	2.33	2.67	2.67	2.67	2.44	2.81

The followings are the six main dimensions which are used to evaluate countries:

1. Border control agencies, like customs, are efficient in their clearance processes (i.e., speed, simplicity, and predictability of formalities).
2. Infrastructure for commerce and transportation (e.g., ports, railroads, roads, and information technology).
3. Ease of coordinating low-cost shipments.

4. Logistics facilities (e.g., transport providers, customs brokers) competence and quality.
5. Consignment tracking and tracing capabilities.
6. Shipments arriving at their destination on time or ahead of schedule.

Iran is ranked 112th in World Bank survey that examines logistics conditions and infrastructures in 155 countries. This means that, considering its existing opportunities and logistical infrastructures, Iran has been unable to effectively leverage its logistics infrastructures and economic opportunities to become a Middle East logistics centre. However, many researchers believe that this can and will be improved by 2025. Other neighbouring countries, on the other hand, benefited from the Middle East's peculiar situation in terms of logistics and economic growth in a proper manner, through proper understanding of environmental constraints, infrastructure improvements, and efficient management of their logistics systems. Emirates, Kuwait, and Turkey are among these nations, which rank ahead of Iran despite having less favourable geographical conditions. Iran's biggest competitors, Turkey, and the United Arab Emirates, were ranked 17th and 27th in the World Bank annual survey, respectively [25].

3. Methodology

This study in terms of method is considered quantitative research. A Likert type questionnaire tool was used while the statistical population of the research was the clients of 3PL companies in Tehran. From within these companies, executives or experts were recruited in the study to answer the questionnaire. These customers were from a variety of companies, from clothing to interior design and decoration. The sample size in this section was calculated by the Cochran formula:

$$N = \frac{Nt^2pq}{D^2(n-1) + t^2pq}$$

Where n is the sample size, N is the total number of statistical population, p is the presence of the trait, q is the absence of the trait, D is the acceptable error of 5% and t is the confidence level at 95% and is equal to (96/1). The number of clients of 3PL companies in Tehran follows an unlimited population, and based on the Cochran formula, 384 executives and experts were chosen from these client companies as the statistical sample.

This selection was done according to a random cluster model; different districts of the city of Tehran were considered as clusters and client companies were randomly selected from within these districts. The reason for using the random clustering method is that the intergroup variance is high regarding the statistical population, and by using this selection method an attempt was made to decrease this variance. The data after collection was analysed using SPSS software. First, the data was encoded and put into the software and then it was analysed using the two descriptive and inferential statistic methods. In the first and second sections, mean, variance, and frequency distribution tables and percentages were used to describe the opinions of the statistical sample regarding the questions. The significance level was set at 0.05. The results were analysed using descriptive and inferential statistics, Friedman's rank test, one-way t test, and mean comparison tests.

4. Data Analysis

The data analysis was performed after collecting the research data. The results related to the questionnaire of the 3PL companies' customers were considered to describe the barriers variable. These variables are the absence of precise review of the program, ambiguity in some items of the contract, high costs, legal barriers, management challenges, not doing the tasks properly, problems in the coordination of the company with the

3PL company, usage of non-specialist force, unpredicted cases, and wrong choice of the 3PL company in alphabetic order.

Table 2. The descriptive statistics of the questionnaire

	Numbers	Average	Standard deviation	Minimum	Maximum
Corporate legal barriers	384	2.94	1.16	1.00	5.0
Management challenges	384	3.25	1.25	1.00	5.0
Law barriers	384	3.38	1.16	1.00	5.0
Not doing the tasks properly	384	3.32	1.18	1.00	5.0
High costs	384	3.28	1.13	1.00	5.00
Use of non-specialist force	384	2.81	1.14	1.00	5.00
Wrong choice of the 3PL company	384	2.87	1.13	1.00	5.00
Absence of precise review of the programs	384	3.53	1.01	1.00	5.00
Problems in the coordination of the firm with the 3PL company	384	2.93	1.15	1.00	5.00
Ambiguity in some items of the contract	384	2.82	1.2	1.00	5.00
Unpredicted cases	384	3.07	0.86	1.00	5.00

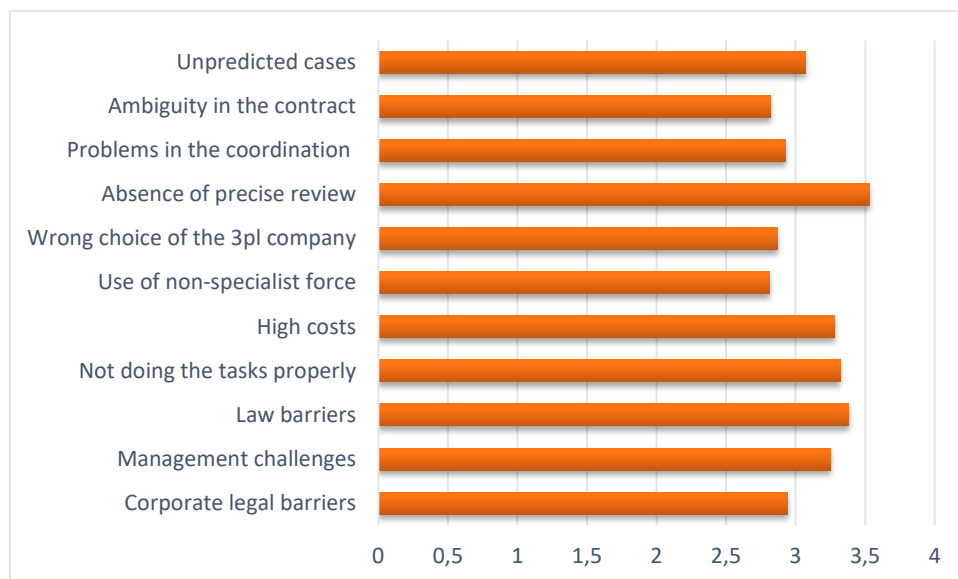


Figure 1: The descriptive statistics of the barrier's variable

According to the indices of the barriers, the factors related to absence of precise review of the programs has the highest average among the factors while factors indices related to management challenges, law issues, not doing the tasks properly and higher costs of outsourcing to 3pl companies seem to have higher scores among participants.

Table 3. The results of the one-sample T-test to identify the barriers

Variable name	The society average = 3				
	Average difference	T-test statistic	Significance level	95% confidence interval	
				Lower bound	Upper bound
Corporate legal barriers	-0.06	-1.06	0.29	-0.18	0.05
Management challenges	0.25	3.93	0.001	0.12	0.38
Law barriers	0.38	6.37	0.001	0.26	0.49
Not doing the tasks properly	0.32	5.28	0.001	0.2	0.44
High costs	0.28	4.87	0.001	0.17	0.39
Use of non-specialist force	-0.19	-3.26	0.001	-0.3	-0.008
Wrong choice of the 3pl company	-0.13	-2.22	0.03	-0.24	-0.01
Absence of precise review of the programs	0.53	10.37	0.001	0.43	0.64
Problems in coordination of the company with the 3pl company	-0.07	-1.24	0.22	-0.19	0.04
Ambiguity in some items of the contract	-0.18	-2.93	0.001	-0.3	-0.06
Unpredicted cases	0.07	1.61	0.11	-0.02	0.16

To study the barriers, the index average was compared to the society average, which is equal to 3. The above average factors in table 1 were under T student test to check their significance and the results of Table 2 shows that in the intended model, the factors of management challenges, law barriers, not doing the tasks properly, high costs and absence of precise review of the programs are significant in the level of 0.05, while average of the factor unpredicted cases could not be trusted as significant. Comparing the average difference of this factor with the zero-mean difference of the society shows that these factors of the company are the main barriers for the retailers in outsourcing the activities of the 3pl companies.

5. Conclusion

Despite the unique logistical potential and advantages in Iran, so far for various reasons, the development of logistics and its infrastructure has been neglected in the country. The main challenges of the country's logistics field can be summarized as lack of a comprehensive document for the field of logistics, lack of multimodal transportation in the country, lack of formation and development of third-party logistics companies, lack of private sector participation in logistics development, disturbances and lack of coordination in the supply chain of commodities and related organizations, lack of development of logistics centres in Iran, the inability to change the country into a commercial hub in the region and the lack of physical infrastructure development.

The most significant limitations of retailers in Iran when outsourcing a logistics activity include management of challenges, official limitations, Improper completion of the task, high costs, and lack of expert knowledge of software programs. The most common reason is that logistics, as a basic function, is much more important than outsourcing itself; cost savings will not be made easily and integrating Iran's IT systems with the 3PL system is very difficult. While there is a particular logic behind each of these reasons not to outsource logistic responsibilities, solving some of these exact factors could accordingly encourage the related companies to farm out all or part of their supply chain responsibilities to 3PL potential partners. There is a great probability for the 3PL companies if they could possibly manage their legal issues to solve the related barriers, especially since it is noted as one of the most important barriers. The majority of 3PL companies' potential customers clearly indicated that failing to carry out tasks properly as well as the absence of precise review of the programs upset them. One could always claim that the lack of communication is the main reason for these barriers; implementing an adequate communication network and good presentation of "how outsourcing the logistic works" could potentially bring a market growth for 3PL companies. Based on this study, it is quite clear what the most significant barriers for the spread of 3PL in Iran are.

Iran is a country that connects the world's east and west, and it has long held a vital position in terms of trade, transportation, and logistics. However, there is currently only around 13,000 kilometres of road, which is insufficient for both passenger travel and foreign trade. Iran's airline industry is plagued by an out-of-date fleet. Lack of cooperation and communication with other modes of transportation, and poor airport profitability is also another major issue. The logistics industry in Iran is in desperate need of investment, and it is seen as a lucrative market for foreign investors. A wide market of 80 million people who are impacted by the current infrastructure (which is outdated, insecure, and slow) and a government which is monopolizing the logistic industry of the country by more than 60% and is not willing to compromise with the west to ease the sanctions.

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Biography

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