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THIRD PARTY LOGISTICS REDUCES COST, MYTH OR REALITY? CASE STUDY OF THE RETAIL INDUSTRY OF MAURITIUS

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Abstract

This study looks at various perspectives about third party logistics and the advantages and disadvantages when outsourcing to 3pl. It also discusses the various risks that are related to third party logistics. The main objectives were to find out on how the various benefits and drawbacks that are related to outsourcing to a third party logistics (3PL). Another aim is to verify the impact of using 3PL in Mauritius. One of the objectives was to find on the benefits related to 3PL. Another aim was to find out on the drawbacks related to 3PL. The methodology used for this study was questionnaire survey quantitative methods among 135 respondents who were from different cooperative sector but response rate was 120. This questionnaire

investigates the various advantages, disadvantages and risks related to third party logistics. After this process, data collected has been analyzed using SPSS 22.0 where demographics analysis, cross tabulation and t-test analysis was performed to find the relationship between the variables. The findings demonstrate that outsourcing of 3PL is slowly becoming famous among suppliers.

Keywords

3rd Party Logistics, Warehousing, Transportation, Quantitative

1. Introduction

Many researchers have been able to demonstrate how outsourcing to a Third Party logistics provider (3PL) reduces the cost and risks of an organization. Most of the researches were done using Europe, America, Asia and Northern Africa as its demography. There is a lack of research that has been done in Southern African countries or a small state island like Mauritius. Mauritius is an island that is logistically well connected. Mauritius depends highly on importation and secondary sector. The supply chains for these industries majorly involve transportation and warehousing of the raw, semi-finished and finished products.

2. Research Aims

The aims of this study are to investigate on how the various benefits and drawbacks that are related to outsourcing to a third party logistics (3PL), verify the impact of using 3PL in Mauritius. And thus, the following Questions have been formulated:

3. Research Questions

- R1: What are the benefits related to the 3PL?
- R2: What are drawbacks related to 3PL?
- R3: Are Suppliers able to reduce their risks related to logistics through outsourcing?
- R4: Which parts of the logistics operation are outsourced?

4. Scope of Study

This research has been carried out in aim to find out whether organizations are willing to outsourcing to a 3PL to derive from the different benefits from it and to find out the factors that is taken by the organizations in Mauritius before deciding on choosing to outsource to a 3PL.

Factors that have been identified after peer reviewing several articles are Risk mitigation, Price, Location and Service quality.

4.1 Literature Review

Supply Chain Management

Supply Chain Management is basically referred as managing the flow of goods. It involves of a set of processes related with the flow of goods, information and money amongst organizations, from the raw materials, through production, consumption and finally recycling stages. Raw materials goes through different stages, geographic and political regions, changes ownerships and means of transportation prior reaching to customers as the finished product. (Bassin, 2010)

Present day supply chain, for example, globalization, decentralization, outsourcing, and without a moment to spare can be acquainted with make supply chain more proficient yet the key choice of outsourcing by any association ought to be made after painstakingly understanding their actual logistics costs and suggestions. One of the most popular definitions of supply-chain management is from Bernard J. (Bud) La Londe, professor of Supply Chain Management at Ohio State University. La Londe characterizes supply-chain management as follows: "The delivery of enhanced customer and economic value through synchronized management of the flow of physical goods and associated information from sourcing to consumption. The effect that SCM has on business is huge and exponential. Two of the principle ways SCM influences business includes:

1. Boosts Client Administration: SCM sways client administration by ensuring the right item grouping and amount are conveyed in an opportune manner. Moreover, those items must be accessible in the area that clients anticipate. Clients ought to likewise get quality after-deal client support.
2. Improves Primary concern: SCM tremendously affects all that really matters. Firm values store network directors since they diminish the utilization of vast altered resources, for example, plants, distribution centers and transportation vehicles in the production network. Likewise, income is expanded in light of the fact that if conveyance of the item can be sped up, benefits will likewise be gotten rapidly.

4.2 Logistics

As per Bloomberg et al (2012), logistics administration is the administration of supply chain capacities and the exercises regularly incorporate inbound and outbound transportation administration, fleet administration, warehousing, materials handling, order satisfaction, logistics system outline, stock administration, supply/request arranging, and administration of outsider logistics administrations suppliers. The elements of logistics administration are: transportation of workers and material, consultancy for setting up warehousing, consultancy for dissemination framework, space and material taking care of, warehousing of items and administration of stocks.

4.3 Third Party Logistics (3PL)

In spite of the fact that there is still no basic definition to Third Party Logistics (3PL), different scholars deciphered it as indicated by their research. Burt and Starling (2013) characterised 3PL as a long haul formal or casual relationship between a shipper and a logistics supplier to render all or an impressive number of logistics exercises for a shipper. Chopra and Meindl (2011) translated it as utilising the administrations of an outer supplier to perform a few or the majority of a company's logistics capacities. City (2010) expressed that 3PL is a relationship between a shipper and outsider which when contrasted and essential administrations, has more customised offerings, includes a more extensive number of administration capacities and is portrayed by a more drawn out term, all the more commonly beneficial relationship. Coyle et al (2010) further explained 3PL by characterising it as a for-contract supplier performing logistics exercises for the purchaser or dealer of crude materials, merchandise in procedure or completed items. As the outsourcing exercises was incomprehensibly expanding in the previous decades, a Council of Supply Chain Management Professionals must be made and authoritatively on an overall premise they characterise 3PL as a firm that gives different logistics administrations to use by clients. A few cases of 3PLs in Mauritius are Velogic Ltd, FedEx, MFD and UPS. These logistics administrations are joined bundles by the supplier and they change from transportation, cross docking, warehousing, bundling, stock administration and up to cargo sending. Accordingly Winners Ltd needs to outsource its Supply Chain Management to a 3PL as the organisation cannot purchase its own boat, manufacture its own particular stockrooms or exchange its merchandise to its clients which will clearly cost a huge number of rupees.

3PL administrations suppliers are the specialists of logistics business hence regardless of the possibility that the organizations have resources available; an organization inside of the

supply chain might have the capacity to improve, due to its relative position in the chain, supply chain expertise and economies of scale. 3PL share responsibility regarding overseeing worldwide supply chains, keeping clients and stores appropriately loaded, and conveying the ideal request unflinchingly. 3PL is additionally favorable when re-building distribution systems as the logistics outsourcing can be a fast approach to re-engineer conveyance systems to meet worldwide business sector requests and pick up an upper hand. 3PL performs obligations, for example, citing, booking, steering, and inspecting, yet doesn't have to claim warehousing offices, vehicles, or air ships. These are regularly rented on terms measuring up to those of the 3PL contract-minimizing obligation to capital consumption. To be helpful for the organizations, 3PL suppliers must demonstrate their client's advantages in money related and operational terms by utilizing uncommon mastery and capacity in the ranges of operations, transactions, and client administration in a way that supplements its clients' prior physical resources. 3PL likewise furnish the organization with security and protection scope on harm items.

Clearly, outsourcing to outsider logistics would help any association to profit by the learning and skill of specific 3PL firms while disposing of a portion of the dangers along the inventory network however a cautious and logical appraisal of different options ought to additionally be considered close by. Fundamentally, an organization can pick between three distinct alternatives to handle its logistics exercises; it might give the capacity in house or set up its own logistics backup or purchase a logistics firm or finally it might outsource the support of an outside supplier.

An outsider logistics supplier spends significant time in incorporated warehousing and transportation administrations, on the other hand it is unprecedented outsider logistics practice to outsource a solitary movement of logistics autonomously, however to outsource various exercises. Third party logistics supplier are viewed as a coordinated logistics administration supplier with IT-related exercises for controlling merchandise stream and stock administration among others. An outsider logistics supplier can be ordered into the benefit based and the non-resource based classifications. The advantage based 3PL supplier possesses a few resources, especially transport-related resources, for example, trucks and stockrooms while the non-resource based 3PL supplier does not claim such resources and as a rule depends on sub-temporary workers' benefits.

4.4 Benefits of 3PL

The outsourcing to a Third Party Logistics has numerous advantages. 3PLs have a massive asset arrange that gives preferences inside of the supply chains by making it more productive and financially savvy as it can impact connections and volume rebates for the exchange of merchandise for the organisation. By outsourcing to a 3PL, the organisation will dispose of infrastructural speculation of building a warehouse for capacity. 3PLs have a superior administration and fundamental aptitude to stay aware of the business best practices and most recent improvement in innovation. One of the basic innovations utilised by 3PLs is ERP (Enterprise Resource Planning) where they can examine and screen practices to dispose of inefficiencies. 3PL suppliers offer improved tracking and monitoring of holders, coordinated transportation and capacity frameworks. The ongoing incorporation of conveyance framework into "host" framework prompts exact and convenient information reporting, in this way, increasing the value of both manufacturing and promoting operations. By continually tracking and updating data, third party logistics suppliers guarantee that their transportation frameworks stay effective, and clients can see where their cargo is and they can be informed quickly if shipping delays happen. 3PLs have the adaptability to react rapidly to changing business sector patterns, changing business situations without significant interruptions to distribution channels. 3PLs decrease the danger as it gives wellbeing and protection scope on the off chance that the products are harmed or stolen. 3PLs give a coordinated answer for pickup, transportation, storage and delivery. Therefore instead of contracting with various organisations and services, a company just contract with a single supplier. From its military roots, logistics is presently one of the key business issues of the day. It has been contended that wars have been won or lost through logistics qualities and capacities. (Fuerst, 2012)

The quickly changing business environment in profoundly aggressive markets, are driving numerous organizations to execute cost sparing procedures to keep up overall revenues. Numerous organizations are outsourcing part or all their part of logistic capacities to third party to have the capacity to accomplish operational efficiencies inside of the inventory network while focusing on their center business exercises. However due contemplations and analysis should be given to cost implementation and suitability for outsourcing. (Goldsby et al, 2015)

3PL could bring about economies of scale and economies of extension, which would empower the company to increment net worthwhile decreasing expenses. By outsourcing logistics activities, firms would have the capacity to save money on capital investment and lessen

budgetary danger in the meantime. The impacts of these economies are gotten depending on the type of the 3PL supplier. The experience and ability of the 3PL supplier would empower them to look for reliable partners or sub-temporary workers and oversee the flow of merchandise and data in the firm. Therefore, the benefit of utilizing third party logistics would bring about decrease in cost, enhanced productivity and adaptability, disposal of infrastructure resources keeping in mind arranging for assets companies can concentrate more on their center abilities.

As Goldsby et al (2015) focuses out, logistics administration suppliers can be more proficient than a maker, since logistics is their center business, henceforth specialization impacts and appropriate use of center capabilities would prompt lower creation costs. Logistics service suppliers would be able to deal with the varying demand patterns than a single organization their client portfolios and lessening work costs in the meantime instead of those companies in the manufacturing sector.

4.5 Drawbacks of 3PL

Then again, the outsourcing of 3PLs has a few downsides. Organisations that outsource have no power over everyday issues as they can oversee it by giving 3PLs a scoreboard and take actions upon bad execution. The organisation who contracted the service of a 3PLs has no control on the representatives of a 3PLs and if at any point the workers go on a strike, the organisation will stay powerless until the matter is given over for insurance refund. The organisation will minimize contact with its clients when outsourcing to a 3PLs as it will be someone else's worker that will handle the client relationship when product is delivered. Workers will not feel inspired on the outsourcing choice as they will feel frail that they may lose their respective employments and this will hose morale. Very often 3PLs contract organisations or people that do not fit in with the ecological and social arrangement in this way making the general population assault the organisation directly hence, damaging its image. An organisation can be left from scratch if the 3PLs suppliers wind up their business and this will directly affect medium organisations' wage.

Outsourcing however is also joined by a few dangers and weaknesses. Loss of control, effect on in-house workforce and financial contemplations are among the generally referred to detriments and dangers included. The most commonly referred to dangers is the loss of control over the logistics capacity as the firm would rely on the service supplier as the very hotspot for information it needs to survey the level of the nature of service. By outsourcing the whole logistics works, a company might confront issues identified with its inner logistics aptitudes in

this way affecting adversely on the in-house workforce by method for occupation misfortune because of the shutting down of divisions of the association. In such a case, to the point that association would not have the capacity to judge the abilities of its outsourced services as far as execution.

4.6 Internal Risks

Every one of these procedures uncovers the supply chain to different dangers from both internal and external sources. Internal dangers could be extensively arranged under five classes specifically, manufacturing dangers brought about by disturbances of inner operations or processes; business dangers created by changes in staff, reporting structures or business processes; control dangers caused by inadequate appraisal and planning; contingency dangers caused by bad for planning and social dangers created by business propensity to delay negative data.

4.7 External Risks

External dangers can be driven by occasions either upstream or downstream. Demand risks can be brought on by unusual or misjudged client request while supply risks can be created by any intrusions to the stream of raw materials or parts within of the supply chain. Environmental dangers related with economic, social, legal and climate variables could also influence the supply chain of a company while business dangers brought about by factors, for example, suppliers' financial or administration stability could also be considered as risks included along the supply chain. While internal dangers are inborn to any company, certain external dangers could be lessened or even wiped out by outsourcing logistics services to third parties.

4.8 Methods

Our data were collected through Quantitative data selection methods By means of that they provide comes about which might be not so difficult to be able to condense, measure, and also sum up. Quantitative research is anxious with screening theory established through idea and/or keeping the potential to be able to approximate how big is this trend connected with attention in line with Krajewski and Ritzman (2012). The particular questionnaire was developed based on the answers extracted from questionnaires spread among the personnel. It offers start finished concerns and also likert range from 1, being Strongly Disagree and 5, Strongly Agree). To be able to accumulate all the facts and various advice, this concerns did not

control by them to be able to without a doubt as well as not any but instead in the far more elaborated vary with different amount of satisfaction.

Descriptive analysis of the assessment Item

Table 1: Descriptive Statistics of Benefits of outsourcing to Third Party Logistics (3PL)

Descriptive Statistics of Benefits of outsourcing to Third Party Logistics (3PL)

	<i>Mean</i>	<i>Std. Deviation</i>
Better Planning is achieved when outsourced to a 3PL	3.56	1.048
There is significant reduction in warehousing cost when outsourcing to 3PL	3.50	.679
3PL offers scalability and flexibility	3.18	.762
3PL makes valuable expertise accessible	3.56	1.048
3PL has a diverse resource network	3.50	.679
3PL encourages continuous optimization	3.28	.920
3PL prioritizes advanced technology	3.28	.920
3PL maximizes growth rate	3.41	.538
3PL ensures security	3.52	.711
3PL improves quality of processes	3.20	.799
3PL improves customer service	3.88	.856

Table 1 above shows a descriptive analysis of the first assessment group that is the benefits of outsourcing to Third Party Logistics. The respondent moreover showed a rather neutral to agreed view to the benefits assessment items; better planning is achieved when outsourced to a 3PL (M= 3.56), there is significant reduction in warehousing cost when outsourcing to 3PL (M= 3.50), 3PL offers scalability and flexibility (M= 3.18), 3PL makes valuable expertise accessible (M= 3.56), 3PL has a diverse resource network (M= 3.50), 3PL encourages continuous optimization (M= 3.28), 3PL prioritizes advanced technology (M= 3.28), 3PL maximizes growth rate (M= 3.41), 3PL ensures security (M= 3.52), 3PL improves quality of processes (M= 3.20), 3PL improves customer service (M= 3.88). The majority of response showed an agreeing and neutral response this shows that the respondents are feeling that there are relatively benefits in outsourcing to third party logistics.

Table 2: Descriptive Statistics of Risks related to Third Party Logistics (3PL)

Descriptive Statistics of risks related to Third Party Logistics (3PL)

	<i>Mean</i>	<i>Std. Deviation</i>
Lack of Staff experience of the 3PL affects the logistics operation	3.77	.762
Inability to implement or achieve latest technology	3.39	.490
Inability to provide just in time information on stock or transport movement	3.54	1.028
Inability to claim on damages due to weak contract with the 3PL	3.80	.771
Supply chain and coordinated management risk which can negatively impact customer service	3.15	.748
Inability to forecast due to lack of reporting and MIS	3.07	.708
Oligopolistic market risk due to few big existing firm	3.29	.455

Table 2 above shows a descriptive analysis of the second assessment group that is the risks related to Third Party Logistics. The respondent moreover showed a rather neutral to agreed view to the risks assessment items; lack of staff experience of the 3PL affects the logistics operation (M= 3.77), inability to implement or achieve latest technology (M= 3.39), inability to provide just in time information on stock or transport movement (M= 3.54), inability to claim on damages due to weak contract with the 3PL (M= 3.80) ,supply chain and coordinated management risk which can negatively impact customer service (M= 3.15), inability to forecast due to lack of reporting and MIS (M= 3.07) and oligopolistic market risk due to few big existing firm(M= 3.29). The majority of response showed an agreeing to neutral response this shows that the respondent are feel that there are relatively risks related to Third Party Logistics.

4.9 Correlation Analysis

The Pearson’s r for the correlation between “benefits of outsourcing to Third Party Logistics” and “risks related to Third Party Logistics” variables is 0.909. The two variables have a tendency to increase or decrease together which is represented by a positive r value less than one. The Sig. (2-tailed) value of 0.000 shows a statistically significant correlation between your two variables. The correlation test proves that respondent who viewed the benefits of outsourcing to Third Party Logistics also agreed with the view that there were also risks related to Third

Party Logistics. The two variables had a rather positive response. The test above demonstrates that there are benefits for winners to outsource to third party logistics but furthermore they also acknowledge the relative risks associated to it.

Table 3: *Correlation Benefits of outsourcing to Third Party Logistics and Risks related to Third Party Logistics*

		Benefits of outsourcing to Third Party Logistics	Risks related to Third Party Logistics
Benefits of outsourcing to Third Party Logistics	Pearson Correlation	1	.909**
	Sig. (2-tailed)		.000
	N	135	135
Risks related to Third Party Logistics	Pearson Correlation	.909**	1
	Sig. (2-tailed)	.000	
	N	135	135
**. Correlation is significant at the 0.01 level (2-tailed).			

Table 4: *Reduction in warehousing cost when outsourcing to Third Party Logistics*

Reduction in warehousing cost when outsourcing to Third Party Logistics

	Frequency	Percent
Strongly Disagree	86	63.7
Disagree	39	28.9
Agree	10	7.4

The table 4 demonstrates a higher response of respondent showing a strongly disagreeing view to the statement (63.7%) followed with 28.9% disagreeing and 7.4% agreeing. The response shows that in fact there is no significant reduction in warehousing cost when outsourcing to third party logistics. Furthermore based on the overall population there were significant negative response therefore it can be said that the respondents were definitely not over for the idea that third party logistics is a mean of cost reduction. Furthermore to have a more in depth view on the significant reduction in warehousing cost when outsourcing to third

party logistics a T-test in table 6 and 7 below was carried out based on the idea that outsourcing of the logistics would moreover result to a reduction in cost.

Table 5: One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
There is significant reduction in warehousing cost when outsourcing to 3PL	135	3.50	.679	.058

Table 6: One-Sample Test

	Test Value = 0						
	t	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		
					Lower	Upper	
There is significant reduction in warehousing cost when outsourcing to 3PL	59.843	134	.000	3.496	3.38	3.61	

The P value in table 7 above is less than 0.05, showing that the variance detected between the sample mean and hypothetical mean is a matter of chance owing to random sampling. Besides the P value of 0.000 indicates a statistically significant difference. Furthermore a 95% confidence interval reveals a proper and precise difference. Additionally from the Mean difference 3.496 it can be concluded that the respondent reported that they regarded reduction in warehousing cost when outsourcing to third party logistics would increase efficiency. This matter proves that at some place the respondent feel that the logistics is not as efficient as it would be in the hand of third party. This might be as result of respondent not viewing logistics is in the structure it should be or it might be a result of some respondent having the mind-set that third party are more reliable and efficient.

Table 7: Multi Regression Analyses

Independent variables	Beta	T	Sig.
Model 1	<u>Benefits of outsourcing to Third Party Logistics</u>		
	R value = .918, R-square = .842, p = .000		
Risks related to Third Party Logistics	1.519	25.760	.000*
Length of Service	.103	2.555	.012*
Highest qualification	.055	1.499	.136
Management level	.031	.545	.587

The Model summary presented above for this Model consists of R value of 0.918, R Square value of 0.842, and Adjusted R Square of 0.837. It can be understood that there is a strong relationship between the independent variables and dependent variable which is denoted by the R value of 0.918. The independent variables: risks related to Third Party Logistics, Length of Service, highest qualification, management level, pronounce 84.2% of the variable, benefits of outsourcing to Third Party Logistics. Furthermore, risks related to Third Party Logistics, Length of Service, highest qualification, management level and benefits of outsourcing to Third Party Logistics variables demonstrate a statistically positive relationship.

The multiple regression analysis discloses that the significance value is 0.000, of the P-value (F=172.98). There were only two determinant variables found in this model that had significant effects on benefits of outsourcing to Third Party Logistics. They were “risks related to Third Party Logistics” ($\beta = 1.519$, $p < 0.001$) and “Length of Service” ($\beta = 0.108$, $p < 0.05$). It suggests that factors which were more concerned about the benefits of third party outsourcing was those people who had relatively some years of service and those who evaluated the risks of outsourcing to third party.

5. Conclusion

The surveyed population was relatively not so sure about the topic. This might be as a result of low accountability and knowledge sharing among staff. Moreover the results found were not so accurate due to the limited time frame, because a longer period of time would have allowed an overall survey. That is the survey could have been carried out in various departments and in various winners outlet, which would have provided more precise results. Nevertheless

based on the survey it can be stated that to some extent outsourcing to third party eventually reduces cost but not when it comes to warehousing. Therefore this is not only a belief, but it can be proven as well.

This research has been able to describe the factors that are taken as priority before deciding on outsourcing to a third-party logistics in a small state island like Mauritius. It has also shown the reasons behind the resistance of companies for outsourcing to 3PL. It has also opened a medium of building up research related to logistics in countries with demographic or location like Mauritius.

This research will make enable firms to know the different advantages and disadvantages of outsourcing to a 3PL. It will also give them an idea on how to compete in the market by using a 3PL which can eventually mitigate risks. This research also shows business opportunities for companies interested in specializing in logistics operations. It helps the interested companies to know the factors that their future clients take in consideration before choosing to outsource.

Scope of Future Research

Further research can be done in same topic on different demographics among small states islands to see the different and enable comparison.

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