

Research

Analyzing the factors that affect to increase logistics costs in Pakistan

Asif Safeer, Dr. Mohammad Asim, Mr. Salman Manzoor

Karachi University Business School, Pakistan, KUBS, Karachi University, Pakistan, KUBS, Karachi University. Pakistan

***Corresponding author**

Accepted: 15 January, 2020; **Online:** 24 January, 2020

DOI : <https://doi.org/10.5281/zenodo.3626428>



Abstract : The analysis in the research is directed towards identifying the factors that contribute towards increase in logistic costs within manufacturing industry of Pakistan. The elements that have been highlighted as positively associated in this regard include lack of information sharing, warehousing, delays and the choice of vehicle. The results were obtained through the data collected from the managers of the organizations through survey. Sample of 50 managers was used to complete the survey. The statistical techniques such as regression and correlation were applied to test the relationship between the relevant variables.

Keywords: Supply chain management, logistics, warehousing, organizational behavior

Contents

1. Introduction	118
2. Literature Review	119
3. Methodology	123
4. Findings	125
5. Discussion	130
6. Concluding Remarks	132
References	134
Dedication	137
Conflicts of Interest	137

1. Introduction

The topic that has been chosen for performing detailed analysis is related to “analyzing the factors that affect to increase logistics costs in Pakistan”. The rationale of conducting research can be provided through the fact that logistics is an important part of the supply chain activities and performance of an organization. Therefore, in the view of Tang and Veelenturf (2019), the cost incurred by organizations in terms of managing their logistic operations have a long-lasting impact on the efficiency of their supply chain which has a subsequent impact on the operational cost of an organization. As a result of that, organizations around the globe are constantly looking to identify ways through which they can reduce their logistics costs by identifying the contributing factors in this regard. Furthermore, it is stated by Zhu, Ng, Wang and Zhao (2017), that management of logistics cost can be considered as of strategic significance for the organizations which identifies the extent to which it is operating in an efficient manner. There are different kinds of logistic costs that are incurred by organizations such as the cost of fuel and warehousing along with cost associated with space and taking security measures for the purpose of protecting the goods.

In the light of the analysis that has been presented above, the aims, objectives and the questions have been developed that are provided below

Aim

The aim is to extract and analyze the impact of different factors that have an influence on the increase in logistics costs of the companies in Pakistan.

Objectives

The objectives of the research have been developed mainly in accordance with the aim that is presented below

- To analyze the significance of logistics cost on supply chain management of an organization
- To identify different factors that can contribute towards increase in logistics cost of organizations in Pakistan
- To analyze the association between various factors related to logistics on increase in logistics cost of the organizations in Pakistan
- To provide recommendations to the organizations operating in different industries in Pakistan through which cost of logistics can be reduced

Questions of the Research

What is the significance of logistics cost for an organization?

What are the different factors that can contribute towards increase in logistics cost of organizations in Pakistan?

What is the association between various factors related to logistics and increase in logistics costs in Pakistan?

What are the suggestions that can be provided to the organizations in Pakistan in terms of reducing their logistics cost in the long run

2. Literature Review

Information sharing is considered as a key component of logistics operations as it results in the flow of information between suppliers and the organizations regarding the kind of goods that are required during a particular period of time. Therefore, lack of proper and effective mechanism of information sharing more often than not result in causing disruptions within the supply chain operations which ultimately contributes towards increase in cost (Pham, Nguyen, McDonald and Tran-Kieu, 2019). However, in order to improve the process of information sharing, it is important that identification is made regarding the kind of information that is to be delivered and the ways in which it needs to be delivered (Ocicka and Wieteska, 2017). Information sharing is the aggregator to organize the production network, just through which an organization can oversee and facilitate different connections and different phases of the store network better. The data sharing among the individuals from the inventory network is significant for improving the exhibition of the entire production network (Kirono and Hadiwidjojo, 2019).

Information sharing and innovation is one of the key parts of logistics operations among parties in an inventory network. Production network effectiveness is exceptionally significant as the present challenge is never again between organizations, however between supply chains. Data sharing can build inventory network productivity by diminishing inventories and improving the quality of production. There are different kinds of information that can be considered as part of the process of information sharing such as inventory, sales, demand and forecasting (Kumar and Pugazhendhi, 2012). Logistics is beneficial in dealing with the situation of demand uncertainty. This is because sharing of information in a timely manner can result in organizations being prepared to deal with the fluctuations that can be reported within the demand of inventory which

facilitates in making necessary adjustments within logistic practices and activities (Zolfagharinia and Haughton, 2012).

Apart from inventory management, the operations related to warehousing also play an important part in terms of determining the kind of cost that is incurred by organization in terms of managing its logistics operations. Warehousing is a significant part of the logistics operations. It gives stockpiling to the completed products and furthermore incorporates pressing and transporting of the request. Cost of capacity unit in different businesses is a significant thing. There are different kinds of warehousing costs that are incurred by organizations which affects the cost at which the logistics of an organization are managed. These costs include storage space cost, installation cost, handling and management cost along with maintenance stock. The kind of warehousing cost that is incurred by an organization is largely dependent upon the nature of its operations (Richards, 2017).

Warehouses and the functions that are performed in it can be considered as important part of the logistic operations of an organization. In relation to cost incurred, it has been reported that the cost of warehousing amounts to almost 20% of the entire logistic cost which is important in terms of fulfillment of objectives related to customer satisfaction. In addition to that, cost in warehousing also occurs because of automization or use of technology to manage the activities and operations that are performed within warehouses (Baker and Halim, 2007). Similarly, it is stated by Rose, Mollenkopf, Autry and Bell (2016) that operations within warehouses should be managed in accordance with the logistics and supply chain operations of a corporation. The involvement of logistics professionals in this regard can be considered as instrumental in terms of managing the complexities that can arise within warehouses and aligning the operations of warehouse in a manner which would be in conformity with the needs and the demand of the customers. In this way, warehouse can contribute towards achieving strategic requirements of the organization along with providing substantial returns against the cost that has been invested in them.

As the organization is required to deal with the demand of various items, making a wrong decision in the logistics operations would influence the stockroom execution and the nature of client care. Current request satisfaction choices are made dependent on the information on the distribution center chief. It is hard for the stockroom administrator to give suitable request taking care of directions with thought of the item qualities and existing distribution center activities.

Predisposition and abstract judgment may bring about an incorrect choice. The absence of an assets distribution methodology may imply that no proposals with respect to the portion of assets are given on the best way to deal with the request when a potential hazard happens. This may bring about ill-advised utilization of assets and loss of consumer loyalty. The warehouse operations include various procedures which affect the operations related to logistics and the cost associated with this particular operation. Contingent upon the kind of distribution center and item to be taken care of, the consideration paid and the client prerequisites are likewise extraordinary. Distribution centers taking care of general freight may concentrate on the effectiveness of request satisfaction, while giving great quality control is significant for a stockroom where exceptional products that are delicate to temperature are dealt with. In this manner, item qualities may once in a while force requirements and vulnerabilities on stockroom tasks arranging. Concerning supportable advancement of a business, it is critical to actualize hazard the board that evaluates dangers looked by the association and create emergency courses of action to moderate the outcomes of dangers and guarantee progression of hazard the executives in an association (Lam, Choy, Ho, Cheng and Lee, 2015).

The other key aspect that has been associated with the logistic cost is the delays within the shipment. Delays can arise due to multiple factors such as occurrence of unforeseen circumstances along with the uncertainty in demand and lack of information. On the contrary, delays within the process of logistics also occur because of absence of strong association between organization and the suppliers. Therefore, it is important that a strong and long-term relationship is established with the suppliers. However, one of the factors that can contribute towards delays in logistics is the delays in the payment from the organization to the suppliers (Srinivasan, Mukherjee and Gaur, 2011).

Delays in order delivery are the fundamental purposes behind punishments and even some of the time the explanation behind end of agreements with providers of products and enterprises. It is expressed the reasonable time of conveyance postpone acknowledged in a few organizations: 30 minutes in Tesco (UK), 15 minutes in Saturn, and 98% of provisions in Siemens EMS are required to be conveyed without a moment to spare. Late appearance to drop-off stations additionally has negative effect on shippers in a circumstance when they use re-appropriating conveyance. For instance, the investigation of the nature of transport administration in a confectionary industrial facility of St. Petersburg indicated that 17% of requests were conveyed

to drop-off stations with delays; when in doubt, the driver lands to the drop-off station during mid-day breaks or is late for day by day acknowledgment of products, along these lines the driver needs to hold up a night move. As it is commitment of the shipper to pay for the conveyance benefits on a time sensitive duty, the shipper pays for the complete personal time hours, acquiring huge misfortunes due to poor course arranging. Clearly, the hour of conveyance courses ought to be arranged in a progressively concurred way in such a circumstance. Nevertheless, the delays are sometimes also caused due to lack of safety and security from the areas where freight is moving. This situation can result in creating unforeseen circumstances resulting in causing significant delays (Lukinskiy, Pletneva, Gorshkov and Druzhinin, 2017).

The other significant aspect associated with the logistics cost is related to the choice of vehicle for the purpose of transferring products from one place to another. A key aspect that is considered while picking transporters is a high reputation as far as dealing with custom authorities is concerned. Custom guidelines and rules are regularly equivocal. Custom authorities utilize their experience to check announcements and investigation requests can be given self-assertively. A few chiefs likewise showed that assessments cause delays as well as increment freight harm and misfortunes (Zhang and Figliozzi, 2010). The costs associated with logistics operations are playing an instrumental role in terms of shaping the logistics as well as the supply chain strategies of the corporations. In the view of Mesa-Arango and Ukkusuri (2013), the element of consolidation contribute towards determining the choice of vehicles for logistics purposes and the extent of the cost that is incurred by firms in this regard. The adoption of effective consolidation practices can result in increase in the amount of profits that can be earned by shippers and carriers along with reducing the negative externalities related to the operations and the management of freight. One of the mechanisms that have been studied in this respect is combinatorial auctions. In this type of auctions, a shipper generally opts for a combination of carriers. Nevertheless, economies of scale can be achieved if shipments are consolidated within the vehicles.

According to Kudlac, Majercak and Majercak, (2017), mode of air transport is used by organizations in situations where they are required to deliver their goods in a short span of time although it incurs heavy additional cost. On the other hand, road transport is used in relation to situation when the issue of time is not present. On the contrary, it is argued by Kahn, Vásquez and De Rezende (2017), that the choice of vehicle in the case of logistics can also result in

organizations facing environmental cost in case the vehicle is not up to the required environmental standards.

Hypotheses Development

Hypotheses have been developed keeping into view the aspects that have been highlighted within the literature

H1: Information sharing has a positive impact on logistics cost

H2: Warehousing has a positive effect in terms of increasing logistics cost

H3: Delays has a positive impact on logistics cost

H4: Choice of Vehicles has a positive effect in terms of increasing logistics cost

3. Methodology

Research Approach

There are two approaches that can be chosen in a research such as qualitative and quantitative. However, the application of a specific approach is largely dependent upon the nature of a research and the type of research questions that are generated. The approach that has been adopted in this study is quantitative in nature. The application of quantitative approach will also be useful in terms of testing hypotheses that were developed for this research on the basis of the analysis of literature review. According to Quinlan, Babin, Carr and Griffin (2019), quantitative approaches are generally preferred by the researchers as they provide opportunity to test the hypotheses that are formulated primarily for the purpose of identifying association between the chosen variables. Nonetheless, one of the drawbacks associated with the application of numeric or quantitative data for researches is that they do not display substantial information about the personality factors that can influence the opinion of the customers regarding a specific issue.

Sources of collecting data

The source that has been used in the research for the purpose of data collection is primary source. This particular source is used through interacting with the managers of the manufacturing organizations in Pakistan and asking them questions about the logistics cost that they have to incur on consistent basis. The utilization of primary data proved to be important as it provided reliable and first-hand information about the chosen issue which might not have been obtained in case of using secondary data. In the view of Walliman (2017), obtaining data through primary source enables a researcher to obtain authentic and relevant findings with the objective of arriving at the desired conclusion. However, a major limitation associated with the use of

primary data is that it does not provide detailed and in-depth information regarding a specific research problem.

Strategy of Research

The strategy that has been used is survey strategy. It is being executed with the help of conducting surveys through questionnaire. The benefit that was obtained through the survey was that the researcher was able to obtain responses from large number of respondents in a short span of time which assisted in the completion of the research in a timely manner. The survey in the current research was conducted by sending the questionnaire to the respondents through e-mail which further saved time and cost of the research. In the view of Jansen (2010), survey strategy is widely used in researchers to obtain diversified views and opinions of the respondents regarding a specific problem of a research.

Design of the Research

The design that has been identified as suitable for the research under question is explanatory in nature. This particular design is being applied for the purpose of providing explanation about different variables that have been identified for this research. Therefore, the explanatory design is applicable in the current research by means of identifying the relationship between different identified factors related to logistics operations and its impact on the logistics cost that is incurred by the manufactures in Pakistan. According to Phang, Wang, Wang, Kauffman and Naldi (2019), causal design of researches are generally used to identify the cause and effective relationship between the variables that are part of the research.

Sample Size

The size of sample that was adopted was of 50 managers of different organizations in the manufacturing industry of Pakistan. This sample was adopted with the help of application of random sample technique where 50 organizations were randomly chosen for the purpose of conducting survey. The questionnaire was sent to the identified 50 respondents through e-mails from where their responses were recorded at Google Docs. The significance of choosing the right kind of sample size can be provided through the analysis of Patten and Newhart (2017), which state that sample should be a true representative of the entire population of a research.

Data Analysis

The analysis regarding the data of the research has been made with the help of application of statistical techniques that are related to regression and correlation. The application of these two

techniques was primarily related to analyzing the influence of independent variable on the dependent variable. In addition to that, there were some other statistical techniques as well that were applied in the process of this research such as Cronbach alpha analysis along with demographic analysis of the research. According to Malec (2018), application of statistical techniques in a research is useful in terms of obtaining numerical evidence regarding a particular problem which is considered as relevant and authentic in terms of presentation of data and findings.

Ethical Considerations

The considerations regarding ethics have been identified in relation to the process of data collection that was applied in the underlying research. It was important to take into consideration the ethical issues as they contribute towards improving the validity and the authenticity of the findings of a research. One of the ethical issues that were needed to be taken into consideration was related to obtaining consent from the respondents before acquiring their views and opinions through the use of questionnaire. Therefore, this particular ethical issue was resolved by means of obtaining consent of the respondents through consent form. This form also provided illustration regarding the purpose of research along with providing explanation regarding the variables.

Apart from autonomy, the other ethical consideration or the issue which was important to be resolved for the purpose of completing this research was maintaining the anonymity of the respondents. This particular ethical requirement was fulfilled by means of avoiding the disclosure of the personality characteristics of the respondents such as the name or the age of the respondents. Apart from that, assurances were also provided to the managers that their responses would be used primarily for the purpose of obtaining the required findings for the research. In order to do so, it was agreed upon with the respondents that their responses would be perished 6 months after the completion in order to fulfill all the ethical obligations associated with the research. According to Stout, Dadich, Evans, Plath and Lawson (2019), it is an ethical responsibility of a researcher to avoid unauthorized use of the data and information that are provided by respondents during the process of survey.

4. Findings

Analysis of Reliability

Reliability Statistics	
Cronbach's Alpha	N of Items
.833	20

Table 1: Reliability Analysis

The first part of the analysis is concerned with analyzing the internal consistency of the scales used in the questionnaire with the help of application of Cronbach alpha analysis. The purpose behind using this tool is because of the fact that it is considered as highly reliable in terms of measuring the internal consistency of the scales that is being used within the questionnaire. The value of Cronbach alpha that was obtained was 0.833 which depicted that the scales are highly consistent within the questionnaire. The threshold value in relation to reliability of the internal consistency of the scales is 0.7 in the light of which it would be fair to say that the data obtained through scales is highly reliable and the results obtained with the help of this data can be considered as applicable.

Demographic Analysis

The analysis that was performed in this particular section was regarding the personal information of the respondents with the objective of highlighting the category of respondents that took part in the process of survey.

Age of the respondents				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 30-35	25	25.0	25.0	25.0
36-41	17	17.0	17.0	42.0
42-47	21	21.0	21.0	63.0
48-52	27	27.0	27.0	90.0
53 and above	10	10.0	10.0	100.0
Total	100	100.0	100.0	

Table 2: Age of the respondents

The first part of the demographic analysis illustrated about the age of the respondents that took part in the process of survey. The findings provided a mixed result where individuals belonging to a variety of age groups were involved in this survey. However, the majority of the respondents were between 48 and 52; whereas, the respondents between the age of 30 to 35 were altogether 25 in number who took part in survey.

Experience of the respondents					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-2 years	24	24.0	24.0	24.0
	3-5 years	25	25.0	25.0	49.0
	6-8 years	23	23.0	23.0	72.0
	7-8 years	28	28.0	28.0	100.0
	Total	100	100.0	100.0	

Table 3: Experience of the respondents

Apart from age, it was also important to analyze the working experience of the respondents that were involved in the process of survey. The results here were also same with the people having the experience in the range of 0 to 8 years were available for providing their views about the issues that were raised within the questionnaire.

Regression Analysis

The objective of regression was to test the hypotheses and obtain clarification regarding the relationship between the independent and the dependent variables. The detail illustration about the results that were obtained in relation to regression analysis is presented below:

Coefficients					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	.833	.225		.000
	Information sharing	.824	.058	.819	.000

Table 4: Regression analysis regarding hypothesis 1

Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.078	.196		5.502	.000
Warehousing	.779	.052	.835	15.036	.000

Table 5: Regression analysis regarding hypothesis 2

Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.707	.385		4.437	.000
Delays	.549	.094	.508	5.842	.000

Table 6: Regression analysis of hypothesis 3

Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.820	.264		6.905	.000
Vehicle Type	.538	.065	.641	8.259	.000

Table 7: Regression analysis of 4th Hypothesis

The tables above that have been presented are concerned with the analysis of regression regarding the independent variables of information sharing, delays, type of vehicles used and warehousing on the dependent variable of logistics cost. The sig values that have been obtained in relation to all these regression analysis is under 0.05 depicting the fact that all the hypotheses

are in acceptable state. Therefore, it would be fair to conclude that all the independent variables are closely associated with the dependent variable.

Correlation Analysis

The purpose behind performing correlation analysis was to analyze the degree of association that is available between the different elements of logistics cost and operation within manufacturing firms operating in Pakistan.

Correlations					
		Information sharing	Warehousing	Delays	Vehicle Type
Information sharing	Pearson Correlation	1	.660**	.381**	.349**
	Sig. (2-tailed)		.000	.000	.000
	N	100	100	100	100
Warehousing	Pearson Correlation	.660**	1	.443**	.681**
	Sig. (2-tailed)	.000		.000	.000
	N	100	100	100	100
Delays	Pearson Correlation	.381**	.443**	1	.494**
	Sig. (2-tailed)	.000	.000		.000
	N	100	100	100	100
Vehicle Type	Pearson Correlation	.349**	.681**	.494**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	100	100	100	100
Logistics Cost	Pearson Correlation	.819**	.835**	.508**	.641**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	100	100	100	100

Table 8: Correlation Analysis

Although the findings of correlation analysis have illustrated different values for different variables; yet, it can be stated that all of them are strongly associated with the logistic cost incurred by manufacturing companies in Pakistan. The value of correlation in the case of analyzing association between logistics cost and information sharing is .819 which depicted a

strong positive correlation. Almost similar situation was reported in the case of identifying association between warehousing and logistics cost where the value of association or correlation that was reported was 0.835. The value of correlation that was demonstrated between the association of logistics cost and delays is 0.5 which still points towards a strong relationship. On the other hand, the variable related to vehicle type was also highlighted as instrumental in this case as it reported the value of 0.6 which also highlights the presence of a strong association between the variables.

5. Discussion

The analysis in the light of the regression and correlation analysis largely illustrated a positive association between the variables which mean that the occurrence of one variable had a considerable influence on the occurrence of other one as well. Therefore, it can be safely stated that the presence of the situation where there is lack of information sharing between the organization and its logistics partner more often than not would result in increase in overall logistics cost. The findings regarding the variable of information sharing also shed light on different aspects such as the focus of the organizations to improve the process of information sharing and its contribution towards increase in operational efficiency. The findings of the literature of Christopher (2016), can also be presented in the support of the findings with respect to this variable where it was indicated that information sharing in the case of logistics is important as it avoids disruptions, delays along with avoiding the situation where the right kind of goods are not being delivered to the organization. All these factors contribute significantly towards increase in overall cost incurred in terms of managing the operations of logistics.

Regarding the variable of warehousing, the findings depicted that the activities that take place within the warehouse of the manufacturing companies contribute significantly towards increase in logistics cost. This is because warehouse is a focal point from where goods are being sent to different destinations. Therefore, lack of efficiency of performance within warehouse can result in organizations suffering from the situation where it is unable to transfer the goods from one destination to another resulting in creating significant complications such as increase in logistics cost. According to Woudsma, and Jakubicek (2019), warehousing is an instrumental part of the logistics operations of a corporation that is directed towards storing the goods and releasing them at an appropriate time for the purpose of making delivery from one destination to another.

However, the role of planning is instrumental in terms of ensuring that the goods are delivered through warehouse in an efficient manner.

Regarding delays, the findings and the analysis of the literature along with the findings of the statistical analysis illustrated that delays in the process of logistics is one of the biggest worries and the challenges for the manufacturing companies in Pakistan. This is because delays not result in increase in cost but it also contributes towards lack of ability of organizations to fulfill customer orders resulting in causing long-term loss of goodwill. Therefore, as per the findings of the survey, the policy makers in the manufacturing industry of Pakistan are constantly involved in making sure that they are constantly involved in reducing delays within their logistics operations. According to Beker, Garces-Descovich, Mangosing, Cabral-Goncalves, Hallett and Morteale (2017), delays in the shipment of goods result in organizations having to deal with the situation of congestion and dealing with inventories without any planning which ultimately results in increase in overall operational and supply chain cost. However, it is argued by Moradlou, Backhouse and Ranganathan (2017), that a major reason behind organizations facing issues related to delays within their supply chain operations are concerned with lack of planning and effective collaboration with the suppliers and the logistic partners. Therefore, it is suggested that the policy makers of different organizations should focus on reducing these inefficiencies in order to avoid consistent delays within their logistics operations.

The final element regarding which discussion was made was concerned with was related to the use of vehicle for the purpose of managing and initiating logistic activities and performance. The utilization of a certain type of vehicle was considered as important mainly because of the fact that different vehicles are used in different situations by organizations in accordance with the specific needs and requirements of their logistic activities. In the view of Kahn, Vásquez and De Rezende (2017), the speed at which an organization intends to deliver the required goods determine to a large extent the cost that is incurred in terms of logistics. For example, if there is a situation where an organization intends to deliver goods quickly, there is a possibility that the kind of vehicle that is used in this case would result in organization incurring higher cost as compared to situation when there is no great deal of hurry in sending the required amount of goods.

The findings of the survey were also in accordance with the analysis of the literature where the managers of the manufacturing organizations depicted that their choice of vehicle is largely

dependent upon their strategic needs at a particular period of time which ultimately has a significant influence on their overall cost. Therefore, the respondents of the survey were of the opinion that the choice of vehicle for the purpose of carrying out logistics operations is one of the avenues through which their logistics cost increases significantly.

6. Concluding Remarks

The findings have demonstrated the fact that there are different elements that can contribute towards increase in the logistics cost of manufacturing companies in Pakistan such as lack of effective information sharing, warehousing expenses, delays in the transportation along with the type of vehicles that are being used for the purpose of carrying out logistics operations. The strong positive correlation between the variables that was demonstrated through the results of the statistical technique also proved the reality about the association that exist between the independent and the dependent variables of the research. Considering the significant influence of these costs on the logistics of the manufacturing companies, it is imperative that the policy makers should take the necessary steps in order to reduce the cost of logistics as much as possible.

Significance of Findings

It should be noted that the findings of this research would be significant for the policy makers of the companies in the manufacturing industry of Pakistan in general and specifically for the logistics managers of these companies. Through the use of these findings, the policy makers of these companies can identify the significance of reducing different costs of logistics in order to improve the overall efficiency of their supply chain operations.

In addition to the policy makers of the organizations, the findings of the research are also expected to be important for the future researchers in terms of conducting further analysis regarding the ways in which the costs related to logistics operations can be analyzed and reduced in the long run. Therefore, the eventual findings and the outcomes of the research are expected to contribute towards increase in the body of knowledge that is available on the issue of information sharing, warehousing, delays and use of vehicles on the overall logistics cost.

Limitations

As far as limitations are concerned, it is to be stated that the major limitation of this research lies with the fact that it is being carried out mainly on the basis of primary data. However, it should be noted that the combination of secondary and primary data is useful for the purpose of

obtaining detailed and in-depth findings regarding a specific research issue or objective. For that to happen, it is important that proper identification of primary and secondary data is made by the researcher to obtain authentic finding.

The other limitation of this data is that it has been undertaken mainly in the context of bigger cities such as Karachi and Lahore because of the availability of the respondents. Therefore, the findings can only be linked with these activities and not with the smaller cities because of the differences between the quality of infrastructure available within these cities which ultimately affects the logistics cost incurred by the firms in the long run. For this purpose, taking into consideration these disparities is instrumental in terms of performing in-depth and consistent findings

In addition to the areas of limitations that have been highlighted above, the other important area that have been highlighted in this regard is concerned with lack of illustration regarding the ways in which overall logistics costs of the operation can be reduced in the long run. Extensive researches will be important in providing guidance to the manufacturing firms as well as firms in other industries about the methods that can be adopted for reducing logistics cost for a consistent period of time.

Areas that can be explored for future researches

The researchers in the future should conduct detailed analysis regarding the ways in which they can reduce their overall logistics cost especially in the case of global business environment. Performing this kind of research would be important as it would contribute towards not only reducing the operational cost but will also contribute towards increasing the overall efficiency of the operations of the corporation

The researchers should also conduct researches and studies within areas regarding the optimization of expenditures and benefits. By doing so, it would be important to maintain a proper balance between cost reduction and the need to carry out necessary activities within logistics operations of the organizations.

By performing further studies about the topic of the current research, it is very much possible that the researcher will be in a position to explore various other aspects about the logistics costs that might not have been explored before. In other words, performing extensive researches can also play an important part in reducing the gaps that have been identified about the topic that has been chosen for this research

Recommendations

Considering the significance of different kinds of logistics cost as illustrated through the findings of the research, it is suggested that the policy makers of the manufacturing companies in Pakistan should contribute extensively towards reducing the cost of logistics operations. The rationale behind application of this suggestion is the fact that the top management of an organization has the required resources and capabilities through which appropriate measures in this regards are undertaken

The other suggestion that needs to be implemented in relation to logistics is to identify the areas where cost is incurred in order to take the necessary measures in terms of eradicating it. The long-term benefit that can be obtained through this suggestion is that it can contribute towards reduction of overall cost of the manufacturing companies of Pakistan

It is also suggested for the manufacturing companies of Pakistan in terms of cost reduction in the field of logistics are to constantly monitor the cost at different stages. The benefit that can be obtained through constant monitoring is that the policy makers in this case would have a clearer idea regarding the overall cost that is incurred which would enable them to reduce it in an effective manner.

References

- [1] Baker, P., and Halim, Z. (2007). An exploration of warehouse automation implementations: cost, service and flexibility issues. *Supply Chain Management: An International Journal*, 12(2), 129-138.
- [2] Beker, K., Garces-Descovich, A., Mangosing, J., Cabral-Goncalves, I., Hallett, D., and Mortelet, K. J. (2017). Optimizing MRI logistics: prospective analysis of performance, efficiency, and patient throughput. *American Journal of Roentgenology*, 209(4), 836-844.
- [3] Christopher, M. (2016). *Logistics and supply chain management*. Pearson UK.
- [4] Jansen, H. (2010). The logic of qualitative survey research and its position in the field of social research methods. In *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research* (Vol. 11, No. 2).
- [5] Kahn, J. R., Vásquez, W. F., and de Rezende, C. E. (2017). Choice modeling of system-wide or large scale environmental change in a developing country context: Lessons from the Paraíba do Sul River. *Science of the Total Environment*, 598, 488-496.

- [6] Kirono, I., and Hadiwidjojo, D. (2019). Logistics performance collaboration strategy and information sharing with logistics capability as mediator variable (study in Gafeksi East Java Indonesia). *International Journal of Quality and Reliability Management*.
- [7] Kudlac, S., Majercak, J., and Majercak, P. (2017). Comparison of different variants of logistics chain with the use of air transport using the software application. *Transportation Research Procedia*, 28, 45-50.
- [8] Kumar, R. S., and Pugazhendhi, S. (2012). Information sharing in supply chains: An overview. *Procedia Engineering*, 38, 2147-2154.
- [9] Lam, H. Y., Choy, K. L., Ho, G. T. S., Cheng, S. W., and Lee, C. K. M. (2015). A knowledge-based logistics operations planning system for mitigating risk in warehouse order fulfillment. *International Journal of Production Economics*, 170, 763-779.
- [10] Lukinskiy, V., Pletneva, N., Gorshkov, V., and Druzhinin, P. (2017). Application of the logistics “just in time” concept to improve the road safety. *Transportation Research Procedia*, 20, 418-424.
- [11] Malec, M. (2018). *Essential statistics for social research*. Routledge.
- [12] Mesa-Arango, R., and Ukkusuri, S. V. (2013). Benefits of in-vehicle consolidation in less than truckload freight transportation operations. *Procedia-Social and Behavioral Sciences*, 80, 576-590.
- [13] Moradlou, H., Backhouse, C., and Ranganathan, R. (2017). Responsiveness, the primary reason behind re-shoring manufacturing activities to the UK: an Indian industry perspective. *International Journal of Physical Distribution and Logistics Management*, 47(2/3), 222-236.
- [14] Ocicka, B., and Wieteska, G. (2017). Sharing economy in logistics and supply chain management. *LogForum*, 13(2).
- [15] Patten, M. L., and Newhart, M. (2017). *Understanding research methods: An overview of the essentials*. Routledge.
- [16] Pham, H. C., Nguyen, T. T., McDonald, S., and Tran-Kieu, N. Q. (2019). Information Sharing in Logistics Firms: An Exploratory Study of the Vietnamese Logistics Sector. *The Asian Journal of Shipping and Logistics*, 35(2), 87-95.

- [17] Phang, D. C., Wang, K., Wang, Q., Kauffman, R. J., and Naldi, M. (2019). How to derive causal insights for digital commerce in China? A research commentary on computational social science methods. *Electronic Commerce Research and Applications*, 35, 100837.
- [18] Quinlan, C., Babin, B., Carr, J., and Griffin, M. (2019). *Business research methods*. South Western Cengage.
- [19] Richards, G. (2017). *Warehouse management: a complete guide to improving efficiency and minimizing costs in the modern warehouse*. Kogan Page Publishers.
- [20] Rose, W. J., Mollenkopf, D. A., Autry, C. W., and Bell, J. E. (2016). Exploring urban institutional pressures on logistics service providers. *International Journal of Physical Distribution and Logistics Management*, 46(2), 153-176.
- [21] Srinivasan, M., Mukherjee, D., and Gaur, A. S. (2011). Buyer–supplier partnership quality and supply chain performance: Moderating role of risks, and environmental uncertainty. *European Management Journal*, 29(4), 260-271.
- [22] Stout, B., Dadich, A., Evans, S., Plath, D., and Lawson, K. (2019). Researching Social Work Practice Ethically and Developing Ethical Researchers. *Ethics and Social Welfare*, 1-15.
- [23] Tang, C. S., and Veelenturf, L. P. (2019). The Strategic Role of Logistics in the Industry 4.0 Era. *Forthcoming in: Transportation Research Part E: Logistics and Transportation Review*.
- [24] Walliman, N. (2017). *Research methods: The basics*. Routledge.
- [25] Woudsma, C., and Jakubicek, P. (2019). Logistics land use patterns in metropolitan Canada. *Journal of Transport Geography*.
- [26] Zhang, Z., and Figliozzi, M. A. (2010). A survey of China's logistics industry and the impacts of transport delays on importers and exporters. *Transport Reviews*, 30(2), 179-194.
- [27] Zhu, W., Ng, S. C., Wang, Z., and Zhao, X. (2017). The role of outsourcing management process in improving the effectiveness of logistics outsourcing. *International Journal of Production Economics*, 188, 29-40.
- [28] Zolfagharinia, H., and Haughton, M. A. (2012). The benefit of information sharing in a logistics outsourcing context. *International Journal of Logistics Systems and Management*, 13(2), 187-208.

Dedication

Not mentioned.

Conflicts of Interest

There are no conflicts to declare.



© 2020 by the authors. TWASP, NY, USA. Author/authors are fully responsible for the text, figure, data in above pages. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>)

