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LOGISTIC COST MANAGEMENT IN ENTERPRISES: THE EXAMPLE OF KARAMAN, AKSARAY AND KAYSERİ PROVINCES

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ABSTRACT

Logistics management is the customer, market and distributional channel based planning of logistic activities and determining the execution of these activities through outsourcing or within the enterprise and conducting the process. And logistic cost management is the preparation of product-based cost and income analysis of the planned logistic activities. Logistics management has two dimensions for the market (external environment) in one aspect and for the enterprise (internal environment) in another aspect. Logistic cost management, on the other hand, requires three-dimensional analysis which also includes product and service based performance analysis involving the other two dimensions. Logistics, the importance of which has gradually increased in recent years in terms of providing the enterprises with competitive advantage, has been studied with regards to cost and management in an attempt to measure the logistic cost management perception of the enterprises active in the organized industrial zones of Karaman, Aksaray and Kayseri provinces in Turkey.

Key Words: Logistic, Logistic cost management

INTRODUCTION

Nowadays, the change and development in the fields of economics, technology and communication globally influence all countries and also the enterprises which serve as the locomotive of national economies closely. This situation has started to make the longstanding competitive pressure on the

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enterprises felt more intensely and brought out the need for more active and productive management of production, marketing and administration activities of the enterprises. Together with this need, also reviewing their management strategies, the enterprises realized that only price-based competition strategies were singly not adequate for them to be successful in the global markets but as well as the price, the strategies aimed at creating place, time and possession utility started to considerably gain importance. And creating place, time and possession utility started to be associated with logistic activities conducted actively and efficiently (Gümüş, 2007).

In this article, logistics, the importance of which has gradually increased in recent years in terms of providing the enterprises with competitive advantage, has been studied with regards to cost and management in an attempt to measure the logistic cost management perception of the enterprises active in the organized industrial zones of Karaman, Aksaray and Kayseri provinces in Turkey.

THE CONCEPT OF LOGISTIC

The concept of logistic is a military concept which comes from French and stands for the service of preparing the armies for war and sustaining them during the war by providing the entire service support which will make the war won (Demir, 2006). As well as being a military term, the lexical meaning of logistic is "the effective and productive planning and implementation of the transfer of all kinds of product, service and information flow from the point of origin to the point of destination" (www.tdk.gov.tr, 2012). Logistics, which has a rather wide content for the enterprises, refers to the supply, stocking and movement of raw material, equipment, intermediate goods and other services inside the enterprise and all activities necessary for the transportation of the produced products to the consumer and the return of the mentioned products for any reason (Tokay et al., 2011). As it can be understood from its definition, logistics is a concept associated with the operational functions. Logistics is associated with the marketing-sale, accounting-finance and production functions and it both directly affects the the activities performed by these functions and is directly affected by these functions. For this reason, it emerges as the key concept for the enterprises to be able to achieve competitive advantage (Parlakkaya et al., 2010:306).

With logistic activities, the enterprises will achieve a set of benefits such as increase in sales, decrease in distribution costs, consistency and equilibrium of production and consumption and positive impact on price stabilization (Çevik and Gülcan, 2011).

LOGISTIC COST MANAGEMENT

The monetary amount of the sacrifices endured by the enterprises to be able to perform the logistic activities can be defined as logistic costs. Logistic costs emerge depending on logistic activities and the percentage of these costs in the total operational costs has been increasing day by day. The costs concerning the transportation activities are regarded as the highest costs of the total logistic

costs and the transportation activities are deemed to be the most important activities of the logistic activities. Because transportation activities both directly affect the total logistic costs and the speed factor of the logistic triangle consisting of speed, quality and cost factors. Basing on the main logistic activities, it is possible to define the logistic cost elements as transportation cost, storage cost, handling cost, cost of order recognition and information management, cost of stock management and other logistic costs (Tokay et al., 2011).

In other words, logistic costs are the costs concerning all activities from attempting to provide a product to the moment it is delivered to the customer and they are composed of the costs of storage, packaging, preparation for shipment, transportation, assembling and all relevant service costs and the costs of preparing invoice, transaction recognition and collection (Gürsoy, 1997: 334-335).

Logistics management is the customer, market and distributional channel based planning of logistic activities and determining the execution of these activities through outsourcing or within the enterprise and conducting the process. And logistic cost management is the preparation of product-based cost and income analysis of the planned logistic activities. Logistics management has two dimensions for the market (external environment) in one aspect and for the enterprise (internal environment) in another aspect. Logistic cost management, on the other hand, requires three-dimensional analysis which also includes product and service based performance analysis involving the other two dimensions. In other words, it requires the preparation of logistic models and plans which include detailed cost analysis depending on the operational activities (Delivand et al., 2011). This situation requires the integration of the costs emerging due to these activities to the accounting information system in order to be able to compare the actual costs resulting from the the planned logistic activities and make a performance analysis.

In today's competitive environment, together with the expansion of the market to a wide area, it is an optimal manner especially for the importing and exporting enterprises to perform their logistic activities through outsourcing rather than within the enterprise. Because the changing conditions of business and competition require the allocation of scarce resources (capital, labour, etc.) in order to be able to perform the basic skills ideally. Otherwise, the ineffective management of both time and scarce resources results in the risk of competitive disadvantage and failure in reaching to the desired level of performance.

When considered from this point of view, the presentation of logistic activities through outsourcing will create the opportunity of focusing on the operational activities, transferring the scarce resources to active and productive fields and by this means increasing the performance of the enterprise (Liu and Lyons, 2011).

In return, the logistic costs emerging due to outsourcing in the periods when the economy and business are well, will be low. And in the off-peak periods of the economy and business, the

logistic activities may bring about a huge financial burden for the enterprise. The amount, unit cost and contract duration of the services to be purchased depending on outsourcing should be determined by considering the future economic and sectoral developments (Aktaş et al., 2011).

With logistic cost management, the effects of the following problems on the enterprise are tried to be determined:

- Are there necessary source, background and qualified staff for the logistic services to be performed within the enterprise?
- What are the calculation methods for the costs emerged by performing the logistic services within the enterprise? Which method should be chosen?
- The effects of performing the logistic services within the enterprise and purchasing them through outsourcing on the performance, costs and time management of the enterprise,
- The management of predictable and unpredictable risks inside and outside the enterprise by performing the logistic services within the enterprise,
- The differences between the transportation speed of goods and services to the markets / customers through performing the logistic services within the enterprise / outsourcing,
- The relationship between the cost and the transportation method chosen for the logistic services,
- The dimension of the relationship between low stock, integration of technological information systems, Access to the market, flexible production and performance / cost according to the changing conditions of competition by logistic cost management

In order to be able to provide continuous, realizable, optimal and extendable logistic services, the consistency of all activities within the enterprise should be ensured during the planning, design and implementation phases (Jane, 2011). Otherwise, while the expenses such as late delivery of the goods and services to the market / customer, delay costs, transportation costs, etc. increase, the disruption of the activities causes customer dissatisfaction, decreasing the profitability and therefore leads to bad time management and decrease in performance. In other words, as long as the goods and services which are the outputs of a well functioning and well governed enterprise are not introduced to the market / customer at the needed time, it won't be possible to reach the desired performance.

Nowadays, most of the enterprises do not calculate the logistic costs as a separate cost item. And many enterprises which calculate the logistic costs as a separate cost item, calculate them as an average figure depending on their past experiences, knowledge or intuition or as a percentage of the sales or they use the traditional methods of cost calculation or make calculations by using one of the methods such as the activity-based costing method (Tokay et al., 2011).

The cost of the logistic services on the enterprise differ by the sector in service, product segment, customer area, logistic network, transportation preferences and logistic service contracts (Roorda et

al., 2010). Together with its enterprises, wide range of product portfolio and customer structure, the internet has the whole world area as its market. Therefore, it has to create a value chain together with both national and international logistic enterprises and receive full service for customer satisfaction (Robinovic et al., 2007). On the other hand, a national enterprise producing industrial products will have a limited number of customers. In this situation, because of the fact that a continuous logistic relationship will not be in question, a long-term contract is not required. For instance; although the costs of logistic services differ according to the sectors, they generally vary between 8-13 % of the product sale value. When the companies which perform their own logistic services themselves in the world are observed, it comes out that these firms do the same job 15-20 % more expensively in comparison with the logistic companies (Hacırüstemoğlu and Şakrak, 2002:96).

METHODOLOGY

Data Collection

The date of research was collected by survey method. And the polls were conducted face to face and via e-mail. 5 point likert scale was used in the poll questions concerning logistic management (part B) and logistic cost management and accounting (part C). The polls of those enterprises which gave lacking answers were excluded at the phase of analysis.

The logistic literature and practical implications were taken into consideration during the preparation of research questions.

The Sample and Content of the Research

The sample of the research is the Central Anatolia Region which is one of the 7 regions of Turkey. Three provinces located in this region were chosen randomly. These provinces are Karaman, Aksaray and Kayseri. The polls were answered by the enterprises in the organized industrial zones of these provinces.

Analysis and Findings

In the research, first of all, the reliability of the poll was tested. At the second phase, frequency analyses regarding the enterprises participating in the poll were carried out. And at the third phase of the analysis, T and ANOVA tests were made for two paired dependent groups on logistic management / accounting. The significant results obtained by the analysis results were included in the article.

Reliability Analysis

46 of 73 scaled questions were included in the reliability test, eliminating some unanswered ones and the following result was found considering 37 of 38 participants.

Table-1. Reliability Statistics

Cronbach's Alpha	N of Items
,929	46

As a result of the performed test, a very high Cronbach's Alpha coefficient such as 0,929 was calculated. And this means the poll will give reliable results.

Frequency Analyses

92,1 % of the companies participated in the research are Incorporated and Limited Companies which are equity companies. Moreover, 71 % of these 38 companies in question have been carrying on their activities for 1-5 years. According to the research, the companies in the provinces where the poll was conducted are generally newly-established ones which are active as equity companies. As seen in the Table 2, 55,3 % of the people who answered the poll completed undergraduate and post graduate education. This is regarded to have made a positive contribution to the reliability of the poll. The performed frequency analyses are included in the section APPENDIX-2 at the end of the study.

Paired-Samples T Test

Paired-samples t test" was made in order to find out whether there is a relationship between the existence of specialized transportation options of the companies receiving logistic services and their prevention of the risks causing compensation such as late delivery, product defects, etc. and the results are as follows.

Table-2. Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Specialized transportation options								
Avoiding the risks causing compensation such as late delivery, product defects, etc	,32432	2,18650	,35946	-,40469	1,05334	,902	36	,373

H_o= There is not a significant difference between the existence average of specialized transportation options and the average of the prevention of the risks causing compensation such as late delivery, product defects, etc.

H_1= There is a significant difference between the existence average of specialized transportation options and the average of the prevention of the risks causing compensation such as late delivery, product defects, etc.

Because the sig. value corresponding to the 0.902 t value is 0,373>0,05, H_1hypothesis is refused and H_0hypothesis is accepted. The companies which prefer the specialized transportation options want to protect their enterprises from the risks causing compensation such as late delivery, product defects, etc. According to this situation, it is understood that the enterprises also prefer to manage the risks which will arise not from the quality of the goods and services offered to the customer but from the production and after-sale phases and that they prefer to protect the institution from such risks.

In was seen in the crosstab that the existence of specialized transportation options was regarded important by 14 of the 19 companies which answered the relevant question. 73,8 % of the limited companies participated in the research prefer specialized transportation options. This supports the fact that limited companies exhibit risk-avoiding behavior.

Table-3. The legal structure of your enterprise/Specialized transportation options

			Specialized transportation options					
			Extremely Important	Very Important	Important	Not That Important	Not At All Important	Total
The legal structure of your enterprise	Incorporated Company	Count	4	3	2	3	3	15
		%within Specialized transportation options	36,4%	42,9%	28,6%	37,5%	75,0%	40,5 %
	Limited Company	Count	6	4	4	4	1	19
		%within Specialized transportation options	54,5%	57,1%	57,1%	50,0%	25,0%	51,4 %
	Private Company	Count	1	0	1	1	0	3
		%within Specialized transportation options	9,1%	,0%	14,3%	12,5%	,0%	8,1%
Total		Count	11	7	7	8	4	37
		%within Specialized transportation options	100,0%	100,0%	100,0%	100,0%	100,0%	100,0 %

97,4 % of the all companies participated in the research answered the land transport as extremely important. In this case, the access of enterprises to the market and customer is only possible by land transport and the transport by sea is also possible by means of land transport. Airline transport is not preferred as it is costly in Turkey's conditions.

Table-4. The legal structure of your enterprise withtransportation method or methods (Land transport)

			Transportation method or methods (Land transport)				Total
			Extremely Important	Very Important	Important	Not At All Important	
The legal structure of your enterprise	Incorporated Company	Count	11	3	0	1	15
		%within The legal structure of your enterprise	73,3%	20,0%	,0%	6,7%	100,0%
	Limited Company	Count	18	1	1	0	20
		%within The legal structure of your enterprise	90,0%	5,0%	5,0%	,0%	100,0%
	Private Company	Count	3	0	0	0	3
		%within The legal structure of your enterprise	100,0%	,0%	,0%	,0%	100,0%
Total		Count	32	4	1	1	38
		%within The legal structure of your enterprise	84,2%	10,5%	2,6%	2,6%	100,0%

"Paired-samples t test" was made in order to search the relationship between the ones whose reason for choosing the transportation method and methods are low cost and those who want to avoid the transportation risks and charges arising during the purchase, sale and after-sale process; and the results were shown in the Table 5.

Table-5. Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Low cost Avoiding the transportation risks and charges during purchase, sale and after-sale process	-,34211	1,38088	,22401	-,79599	,11178	-1,527	37	,135

H_o=There is not a significant difference between the averages of the ones whose reason for choosing the transportation method and methods are low cost and the averages of those who want to avoid the transportation risks and charges arising during the purchase, sale and after-sale process.

H_1= There is a significant difference between the averages of the ones whose reason for choosing the transportation method and methods are low cost and the averages of those who want to avoid the transportation risks and charges arising during the purchase, sale and after-sale process.

Because in the results of the "dependent two-sample t-test", the sig. value corresponding to the -1,525t value is 0,135>0,05, H_0hypothesis is accepted and H_1hypothesis is refused. This means that while choosing the transportation method and methods, the companies in question want to reduce their costs by avoiding the transportation risks and charges arising during the purchase, sale and after-sale process. Depending on today's conditions of competition, the quality, price and features of the goods and services offered by the enterprises are formed in the market. This situation makes it compulsory for the enterprises to focus not on the sale of the goods or services but on the costs and risks arising due to the activities during the supply, delivery and after-sale process. The enterprises participated in the poll follow a correct strategy in this respect.

The Anova Test

The one-way ANOVA test was made in order to prove whether the answers given to the question about "the strategic storage and packaging process of the stocks" included in the questions asked to measure the logistic perceptions of the enterprises, differ according to the legal structure of the enterprise.

Table-6. Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
3,188	2	35	,053

Because, as a result of the test, the Levene statistic sig. value is 0,053>0,05, the homogeneity of variances have been proven. Consequently, since the fundamental assumption of the variance analysis has been verified, it is seen that the results to be obtained from the variance analysis are sound.

Table-7. ANOVA The strategic storage and packaging process of the stocks

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6,318	2	3,159	3,873	,030
Within Groups	28,550	35	,816		
Total	34,868	37			

$H_{0:}$ There is not difference between the groups of the legal structures of those enterprises with the perception of logistics as "the strategic storage and packaging of the stocks".

$H_{1:}$ There is difference between the groups of the legal structures of those enterprises with the perception of logistics as "the strategic storage and packaging of the stocks".

When the Table 7 is taken into consideration, because the sig. value corresponding to the 3,873 f value is 0,03<0,05, H_0 hypothesis is refused and H_1 hypothesis is accepted. The difference between the groups has been proven and is shown in the post hoc test in the Table 8 to identify the difference between the groups.

Table-8. Post-Hoc The strategic storage and packaging process of the stocks

	The legal structure of your enterprise	The legal structure of your enterprise	Mean Difference (I-J)	Std. Error	Sig.	99% Confidence Interval	
						Lower Bound	Upper Bound
Tukey HSD	Incorporated Company	Limited Company	-,78333	,30849	,041	-1,7441	,1774
		Private Company	-1,06667	,57121	,163	-2,8457	,7123
	Limited Company	Incorporated Company	,78333	,30849	,041	-,1774	1,7441
		Private Company	-,28333	,55919	,869	-2,0249	1,4582
	Private Company	Incorporated Company	1,06667	,57121	,163	-,7123	2,8457
		Limited Company	,28333	,55919	,869	-1,4582	2,0249
Bonferroni	Incorporated Company	Limited Company	-,78333	,30849	,047	-1,7551	,1885
		Private Company	-1,06667	,57121	,211	-2,8661	,7328
	Limited Company	Incorporated Company	,78333	,30849	,047	-,1885	1,7551
		Private Company	-,28333	,55919	1,000	-2,0449	1,4782
	Private Company	Incorporated Company	1,06667	,57121	,211	-,7328	2,8661
		Limited Company	,28333	,55919	1,000	-1,4782	2,0449

According to the results of the Tukey and Bonferroni tests, a difference was noticed between the limited and incorporated companies; and the sig. values were found as 0,041 and 0,047, respectively. Because the relevant value is lower than 0,05, it has been proven that the perception of logistics of the limited and incorporated companies differs in this respect. This difference between the companies means that the incorporated companies focus on cost management.

The one-way ANOVA test was made to find out whether the answers of the question about "developing expertise and acquiring information on the market" included in the questions asked to

measure the benefits of the logistic services for the enterprise, differ according to the product potential of the enterprise, in other words, according to the volume of the company.

Table-9. Test of Homogeneity of Variances Developing expertise and acquiring information on market

Levene Statistic	df1	df2	Sig.
1,020	3	34	,396

First of all, because the sig. value of the Levene statistic of the test is 0,396>0,05, it was found that the variances are homogenous and therefore positive results can be obtained.

Table-10.ANOVA Developing expertise and acquiring information on market

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	14,137	3	4,712	3,355	,030
Within Groups	47,758	34	1,405		
Total	61,895	37			

H_0:There is not difference between the benefits of developing expertise and acquiring information on market and the product range groups produced by the enterprise.
H_1:There is difference between the benefits of developing expertise and acquiring information on market and the product range groups produced by the enterprise.

Because, according to the results of the ANOVA test, the sig. value corresponding to the 3,355 f value is 0,03<0,05, H_0hypothesis is refused and H_1hypothesis is accepted. There is difference between the groups. In the Table 11, we can see between which groups there is difference.

Table-11. Post-Hoc Developing expertise and acquiring information on market

	The number of the product ranges produced in your enterprise	The number of the product ranges produced in your enterprise	Mean Difference (I-J)	Std. Error	Sig.	99% Confidence Interval	
						Lower Bound	Upper Bound
Tukey HSD	26-50	51-100	-,78788	,72942	,704	-2,7579	1,1821
		101-250	-1,27273(*)	,43765	,031	-2,4547	-,0907
		250 veustu	,54545	,87531	,924	-1,8186	2,9095
	51-100	26-50	,78788	,72942	,704	-1,1821	2,7579
		101-250	-,48485	,77195	,922	-2,5697	1,6000
		250 veustu	1,33333	1,08191	,611	-1,5887	4,2554
	101-250	26-50	1,27273(*)	,43765	,031	,0907	2,4547
		51-100	,48485	,77195	,922	-1,6000	2,5697

		250 veustu	1,81818	,91105	,210	-,6424	4,2787
	251- more products	26-50	-,54545	,87531	,924	-2,9095	1,8186
		51-100	-1,33333	1,08191	,611	-4,2554	1,5887
		101-250	-1,81818	,91105	,210	-4,2787	,6424
Bonferroni	26-50	51-100	-,78788	,72942	1,000	-2,8314	1,2556
		101-250	-1,27273(*)	,43765	,038	-2,4988	-,0466
		250 veustu	,54545	,87531	1,000	-1,9067	2,9977
	51-100	26-50	,78788	,72942	1,000	-1,2556	2,8314
		101-250	-,48485	,77195	1,000	-2,6475	1,6778
		250 veustu	1,33333	1,08191	1,000	-1,6977	4,3643
	101-250	26-50	1,27273(*)	,43765	,038	,0466	2,4988
		51-100	,48485	,77195	1,000	-1,6778	2,6475
		250 veustu	1,81818	,91105	,324	-,7341	4,3705
	251- more products	26-50	-,54545	,87531	1,000	-2,9977	1,9067
		51-100	-1,33333	1,08191	1,000	-4,3643	1,6977
		101-250	-1,81818	,91105	,324	-4,3705	,7341

In the table above, depending on the 0,031<0,05 sig. value, it has been proven that there is difference between the companies which produce between 26-50 products and the companies which produce between 101-250 products. This is because the low-potential enterprises need to develop their expertise and acquire more information on the market. And the enterprises which are bigger than a certain size are already ruled with systems expert in their field and since they dominate the market, these instutitions do not acquire information but the information is acquired from them.

In today's competitive environment, in order to reach the sales volume, cost and profitability determined according to the intended performance, the enterprises should very well plan, design and manage the entire process which begins with supply and continues with after-sale activities. The integration of all processes in the accounting information system will enable a healthy information flow.

This situation leads the enterprises to the sense of focusing on the activities / costs with a customer-oriented perspective. When considered from this point of view, it is of high importance to provide the delivery of the produced goods and services on time, to purchase many logistic services such as transportation, stock management, supply, etc. through outsourcing and to direct the scarce resources to the profitable investment fields which improve the basic skills. This shows the relationship between the logistic services and cost management.

According to the results of the analysis, for the performance of logistic services, the enterprises:

- Prefer the specialized transportation options to avoid the risks causing compensation such as late delivery, product defects, etc.
- Prefer the land transport as a transportation option. At this point, the geographical structure stands out as the main reason. When legally compared, a significant

difference was found also between the enterprises. Moreover, there is a significant difference between the enterprises during the process of strategic storage and packaging of the stocks. Incorporated companies focus more on this subject.

- Use cost management to reduce the costs and avoid the risks which emerge during sale and after-sale process.
- According to the product volume, a difference was found between the enterprises in terms of developing expertise and acquiring information on the market. This may mean that small-sized enterprises need more information on the market to be able to compete and by this way they can healthfully continue their development on main activities. The most ideal process of acquiring information can be provided by the active and productive management of logistic services.

According to the results of the study, it is understood that the enterprises which answered the poll follow the appropriate logistic strategies depending on today's conditions of competition. Because the enterprises generally focus on all of the logistic activities including the supply and sale/after-sale services. In order to get more healthy results from the study in the future, researches should be done about the enterprises taking part in the sectoral, regional and general economics.

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APPENDİX 1

LOGISTIC COST MANAGEMENT

A- GENERAL INFORMATION

A1- The legal structure of your enterprise	**A2- The sector your enterprise is active in**	**A3- The positions of the people who answered the poll in the enterprise**
( ) Incorporated Company ( ) Limited Company (…)Unlimited/Commandite Company	( ) Biscuits Chocolate ( ) Milk and Milk Products ( ) Machine Manufacturing Industry ( ) Packaging	( ) Accounting supervisor ( ) Manager/Deputy Manager ( ) Top Director ( ) Employer/Partner

A4- For how many years is your enterprise active in this sector	**A5- The educational status of the people who answered the poll**	**A6- The number of the product ranges produced in your enterprise**
( ) 1-5 years ( ) 6-10 years ( ) 11-20 years ( ) 21-50 years ( ) 51- more	( ) Postgraduate ( ) Graduate ( ) Associate degree ( ) Highschool ( ) Other (please state)……..….	( ) 1- 25 products ( ) 26-50 products ( ) 51-100 products ( ) 101-250 products ( ) 251- more products

B- LOGISTICS MANAGEMENT					
1- What do you understand from the word "logistics"? Could you mark your priority according to its importance level?	Extremely Important	Very Important	Important	Not That Important	Not At All Important
1a- The strategic storage and packaging process of the stocks	1	2	3	4	5
1b- Management of the document and order process regarding the stocks	1	2	3	4	5
1c- Stock management and control	1	2	3	4	5
1d- Distribution centre and traffic management	1	2	3	4	5
1e- National and international transportation services	1	2	3	4	5
1f- Import-Export procedures and clearance	1	2	3	4	5
1g- Marketing and customer relationship management	1	2	3	4	5
1h- The efficient use of information technologies	1	2	3	4	5
2-Which transportation method or methods are used in your enterprise? Could you mark your priority according to its importance level?	Extremely Important	Very Important	Important	Not That Important	Not At All Important
2a- Land transport	1	2	3	4	5
2b- Air transport	1	2	3	4	5
2c- Sea transport	1	2	3	4	5
2d- Train	1	2	3	4	5
2e- Other-please state (RORO- Pipelines etc.)……	1	2	3	4	5
3- Could you please mark your reasons of choosing the transportation method or methods in the second question?	Extremely Important	Very Important	Important	Not That Important	Not At All Important
3a- Low cost	1	2	3	4	5
3b- Fast Access to market	1	2	3	4	5
3c- Wide service area	1	2	3	4	5
3d- Specialized transportation options	1	2	3	4	5
4e- Reliable organized shipping	1	2	3	4	5
4- Please mark the benefits of logistic services for your enterprise according to the importance level.	Extremely Important	Very Important	Important	Not That Important	Not At All Important
4a- Reducing the costs	1	2	3	4	5
4b- Developing expertise and acquiring information on market	1	2	3	4	5
4c- Increasing the operational efficiency	1	2	3	4	5
4d- Improving customer services	1	2	3	4	5
4e- Focusing on the main area of activity	1	2	3	4	5
4f- High elasticity	1	2	3	4	5
4g- Reducing the Stock	1	2	3	4	5
4h- Access to the market in a shorter time	1	2	3	4	5
4i- With the help of logistics, getting the chance of investing the sources which emerge as a result of the failure in storage and transport activities	1	2	3	4	5
4j- With the help of logistics, avoiding the loss of	1	2	3	4	5

time and labour in the services such as storage, transportation, stock control and clearance which are irrelevant to the main activity areas and also the performance of these services professionally					
4k- Avoiding the transportation risks and charges during purchase, sale and after-sale process	1	2	3	4	5
4l- Avoiding the risks causing compensation such as late delivery, product defects, etc.	1	2	3	4	5
4m- Avoiding the risk of inactive instruments and labour	1	2	3	4	5
C- LOGISTIC COST MANAGEMENT / ACCOUNTING					
1-Your method of calculating the logistic costs?	Extremely Important	Very Important	Important	Not That Important	Not At All Important
1a- As percentage of sales	1	2	3	4	5
1b- According to the weight and volume of the produced products	1	2	3	4	5
1c- According to the activity-based costing method	1	2	3	4	5
1d- Depending on the departments such as Production-Marketing	1	2	3	4	5
1e- Other (please state)	1	2	3	4	5
2-Which are the definite logistic costs in your enterprise? Could you please range them according to the importance level?	Extremely Important	Very Important	Important	Not That Important	Not At All Important
2a- Supply	1	2	3	4	5
2b- Distribution	1	2	3	4	5
2c- Communication	1	2	3	4	5
2d- Storage	1	2	3	4	5
2e- Transportation	1	2	3	4	5
2f- Order	1	2	3	4	5
2g- Packaging	1	2	3	4	5
2h- Handling	1	2	3	4	5
3- Which are the indefinite logistic costs in your enterprise? Could you please rank them according to the importance level?	Extremely Important	Very Important	Important	Not That Important	Not At All Important
3a- Late interest cost	1	2	3	4	5
3b- Opportunity cost	1	2	3	4	5
3c- Damage cost	1	2	3	4	5
3d- Coordination cost	1	2	3	4	5
3e- Human resources cost	1	2	3	4	5
4-How many percent of the product sale value do the logistic costs stand for in your enterprise? Please mark only one option.					
4a- Between 1 % - 5 %					
4b- Between 6 % - 10 %					
4c- Between 11 % - 15 %					
4d- Between 16 % - 20 %					
4e- 21 % and more					
5- Do you focus on the logistic costs in your enterprise?	**( ) Yes**			**( ) No**	
6- 5. If your answer is yes, could you please mark the reason according to the importance level?	Extremely Important	Very Important	Important	Not That Important	Not At All

					Im por tant
6a- To reach the desired product profitability					
6b- To enable the correct pricing of the product					
6c- Correct management of customer relations					
6d- To provide the profitability of the enterprise					
6e- To enable the active and productive operation of distribution channels					
7- 5. If your answer is no, could you please mark the reason according to the importance level?	Extremely Important	Very Impor tant	Important	Not That Important	Not At All Im por tant
7a- Logistic costs are relatively unimportant in the product sales					
7b- Logistic services are purchased standardly from the outside					
7c- Much of the product and service delivery is made in the workplace					
7d- Logistic costs are met by the customer					
7e- Other (please state)……					
8-Could you please mark the inside accounting method or methods used for the logistic cost management in your enterprise? (If your answer to the 5th question is no, then please leave this question empty)	**We use**			**We don't use**	
8a- Target costing					
8b- Activity based costing					
8c- Total cost value					
8d- Traditional costing					
8e- Other (please state)…….					
9- What are the outside accounting methods (strategies) used for the management and reduction of logistic costs in your enterprise? Could you please rank them according to the importance level?	Extremely Important	Very Impor tant	Important	Not That Important	Not At All Im por tant
9a- Bargain for the transportation charges					
9b- Selection of new transportation enterprises					
9c- Providing the coordination (consistency) of the transportation enterprises					
9d- Close cooperation with the suppliers					
9e- Logistic technonolgy based working					
9f- Developing right on time production-storage and stocking programs					
9g- Forming market oriented production and marketing centres					
9h- Focusing on the main activities and outside service purchasing of the logistic activities					

APPENDİX 2 (Frequencies Analysis)

Table-1.A Group Questions

		Frequency	Percent	Cumulative Percent
The legal structure of your enterprise	Incorporated Company	15	39,5	39,5
	Limited Company	20	52,6	92,1
	Private Company	3	7,9	100,0
	Total	38	100,0	
For how many years is your enterprise active in this sector	1-5	27	71,1	71,1
	6-10	6	15,8	86,8
	51- more	5	13,2	100,0
	Total	38	100,0	
The positions of the people who answered the poll in the enterprise	Accounting supervisor	18	47,4	47,4
	Manager/Deputy Manager	6	15,8	63,2
	Top Director	8	21,1	84,2
	Employer/Partner	4	10,5	94,7
	Other (please state)……	2	5,3	100,0
	Total	38	100,0	
The educational status of the people who answered the poll	Postgraduate	13	34,2	34,2
	Graduate	8	21,1	55,3
	Associate degree	6	15,8	71,1
	Highschool	5	13,2	84,2
	Other (please state)……..….	6	15,8	100,0
	Total	38	100,0	
The number of the product ranges produced in your enterprise	26-50	22	57,9	57,9
	51-100	3	7,9	65,8
	101-250	11	28,9	94,7
	251- more products	2	5,3	100,0
	Total	38	100,0	

Table-2.B1 Group Questions

		Frequency	Percent	Cumulative Percent
The strategic storage and packaging process of the stocks	Extremely Important	20	52,6	52,6
	Very Important	10	26,3	78,9
	Important	5	13,2	92,1
	Not That Important	3	7,9	100,0
	Not At All Important	0	0	100,0
	Total	**38**	**100,0**	
Management of the document	Extremely Important	17	44,7	44,7

and order process regarding the stocks	Very Important	9	23,7	68,4
	Important	9	23,7	92,1
	Not That Important	3	7,9	100,0
	Not At All Important	0	0	100,0
	Total	**38**	**100,0**	
Stock management and control	Extremely Important	17	44,7	44,7
	Very Important	7	18,4	63,2
	Important	11	28,9	92,1
	Not That Important	3	7,9	100,0
	Not At All Important	0	0	100,0
	Total	**38**	**100,0**	
Distribution centre and traffic management	Extremely Important	8	21,1	21,1
	Very Important	11	28,9	50,0
	Important	10	26,3	76,3
	Not That Important	5	13,2	89,5
	Not At All Important	4	10,5	100,0
	Total	**38**	**100,0**	
National and international transportation services	Extremely Important	10	26,3	26,3
	Very Important	11	28,9	55,3
	Important	11	28,9	84,2
	Not That Important	4	10,5	94,7
	Not At All Important	2	5,3	100,0
	Total	**38**	**100,0**	
Import-Export procedures and clearance	Extremely Important	13	34,2	34,2
	Very Important	11	28,9	63,2
	Important	8	21,1	84,2
	Not That Important	3	7,9	92,1
	Not At All Important	3	7,9	100,0
	Total	**38**	**100,0**	
Marketing and customer relationship management	Extremely Important	11	28,9	28,9
	Very Important	8	21,1	50,0
	Important	10	26,3	76,3
	Not That Important	5	13,2	89,5
	Not At All Important	4	10,5	100,0

	Total	**38**	**100,0**	
The efficient use of information technologies	Extremely Important	10	26,3	26,3
	Very Important	6	15,8	42,1
	Important	11	28,9	71,1
	Not That Important	5	13,2	84,2
	Not At All Important	6	15,8	100,0
	Total	**38**	**100,0**	

Table 3: B3 Group Questions

		Frequency	**Percent**	**Cumulative Percent**
Low cost	Extremely Important	15	39,5	39,5
	Very Important	12	31,6	71,1
	Important	6	15,8	86,8
	Not That Important	5	13,2	100,0
	Not At All Important	0	0	100,0
	Total	38	100,0	
Fast Access to market	Extremely Important	22	57,9	57,9
	Very Important	8	21,1	78,9
	Important	7	18,4	97,4
	Not That Important	0	0	97,4
	Not At All Important	1	2,6	100,0
	Total	38	100,0	
Wide service area	Extremely Important	19	50,0	50,0
	Very Important	8	21,1	71,1
	Important	10	26,3	97,4
	Not That Important	0	0	97,4
	Not At All Important	1	2,6	100,0
	Total	38	100,0	
Specialized transportation options	Extremely Important	11	28,9	29,7
	Very Important	7	18,4	48,6
	Important	7	18,4	67,6
	Not That Important	8	21,1	89,2
	Not At All Important	4	10,5	100,0
	Missing System	1	2,6	
	Total	38	100,0	

Table-4.B4 Group Questions

		Frequency	Percent	Cumulative Percent
Reducing the costs	Extremely Important	21	55,3	55,3
	Very Important	9	23,7	78,9
	Important	7	18,4	97,4
	Not That Important	1	2,6	100,0
	Not At All Important	0	0	100,0
	Total	**38**	**100,0**	
Developing expertise and acquiring information on market	Extremely Important	6	15,8	15,8
	Very Important	8	21,1	36,8
	Important	12	31,6	68,4
	Not That Important	6	15,8	84,2
	Not At All Important	6	15,8	100,0
	Total	38	100,0	
Increasing the operational efficiency	Extremely Important	7	18,4	18,4
	Very Important	6	15,8	34,2
	Important	12	31,6	65,8
	Not That Important	8	21,1	86,8
	Not At All Important	5	13,2	100,0
	Total	38	100,0	
Improving customer services	Extremely Important	10	26,3	26,3
	Very Important	6	15,8	42,1
	Important	16	42,1	84,2
	Not That Important	2	5,3	89,5
	Not At All Important	4	10,5	100,0
	Total	38	100,0	
Focusing on the main area of activity	Extremely Important	14	36,8	36,8
	Very Important	9	23,7	60,5
	Important	8	21,1	81,6
	Not That Important	5	13,2	94,7
	Not At All Important	2	5,3	100,0
	Total	38	100,0	
High elasticity	Extremely Important	5	13,2	13,2

	Very Important	7	18,4	31,6
	Important	14	36,8	68,4
	Not That Important	8	21,1	89,5
	Not At All Important	4	10,5	100,0
	Total	38	100,0	
Reducing the Stock	Extremely Important	12	31,6	31,6
	Very Important	16	42,1	73,7
	Important	5	13,2	86,8
	Not That Important	3	7,9	94,7
	Not At All Important	2	5,3	100,0
	Total	38	100,0	
Access to the market in a shorter time	Extremely Important	12	31,6	31,6
	Very Important	12	31,6	63,2
	Important	7	18,4	81,6
	Not That Important	1	2,6	84,2
	Not At All Important	6	15,8	100,0
	Total	38	100,0	
With the help of logistics, getting the chance of investing the sources which emerge as a result of the failure in storage and transport activities	Extremely Important	8	21,1	21,1
	Very Important	14	36,8	57,9
	Important	12	31,6	89,5
	Not That Important	3	7,9	97,4
	Not At All Important	1	2,6	100,0
	Total	38	100,0	
With the help of logistics, avoiding the loss of time and labour in the services such as storage, transportation, stock control and clearance which are irrelevant to the main activity areas and also the performance of these services professionally	Extremely Important	11	28,9	28,9
	Very Important	15	39,5	68,4
	Important	7	18,4	86,8
	Not That Important	4	10,5	97,4
	Not At All Important	1	2,6	100,0
	Total	38	100,0	
Avoiding the transportation	Extremely Important	11	28,9	28,9

risks and charges during purchase, sale and after-sale process	Very Important	9	23,7	52,6
	Important	12	31,6	84,2
	Not That Important	5	13,2	97,4
	Not At All Important	1	2,6	100,0
	Total	38	100,0	
Avoiding the risks causing compensation such as late delivery, product defects, etc.	Extremely Important	15	39,5	39,5
	Very Important	5	13,2	52,6
	Important	9	23,7	76,3
	Not That Important	7	18,4	94,7
	Not At All Important	2	5,3	100,0
	Total	38	100,0	
Avoiding the risk of inactive instruments and labour	Extremely Important	7	18,4	18,4
	Very Important	16	42,1	60,5
	Important	11	28,9	89,5
	Not That Important	3	7,9	97,4
	Not At All Important	1	2,6	100,0
	Total	38	100,0	

Table-5.C2 Group Questions

		Frequency	**Percent**	**Cumulative Percent**
Supply	Extremely Important	21	55,3	55,3
	Very Important	8	21,1	76,3
	Important	5	13,2	89,5
	Not That Important	2	5,3	94,7
	Not At All Important	2	5,3	100,0
	Total	38	100,0	
Distribution	Extremely Important	14	36,8	36,8
	Very Important	12	31,6	68,4
	Important	9	23,7	92,1
	Not That Important	1	2,6	94,7
	Not At All Important	2	5,3	100,0
	Total	38	100,0	
Communication	Extremely Important	10	26,3	26,3
	Very Important	4	10,5	36,8
	Important	9	23,7	60,5

	Not That Important	7	18,4	78,9
	Not At All Important	8	21,1	100,0
	Total	38	100,0	
Storage	Extremely Important	10	26,3	26,3
	Very Important	19	50,0	76,3
	Important	4	10,5	86,8
	Not That Important	4	10,5	97,4
	Not At All Important	1	2,6	100,0
	Total	38	100,0	
Transportation	Extremely Important	17	44,7	44,7
	Very Important	12	31,6	76,3
	Important	8	21,1	97,4
	Not That Important	0	0	97,4
	Not At All Important	1	2,6	100,0
	Total	38	100,0	
Order	Extremely Important	9	23,7	23,7
	Very Important	6	15,8	39,5
	Important	12	31,6	71,1
	Not That Important	10	26,3	97,4
	Not At All Important	1	2,6	100,0
	Total	38	100,0	
Packaging	Extremely Important	13	34,2	34,2
	Very Important	10	26,3	60,5
	Important	11	28,9	89,5
	Not That Important	2	5,3	94,7
	Not At All Important	2	5,3	100,0
	Total	38	100,0	
Handling	Extremely Important	16	42,1	42,1
	Very Important	8	21,1	63,2
	Important	8	21,1	84,2
	Not That Important	1	2,6	86,8
	Not At All Important	5	13,2	100,0
	Total	38	100,0	

Table-6. C3 Group Questions

		Frequency	Percent	Cumulative Percent
Late interest cost	Extremely Important	10	26,3	26,3
	Very Important	9	23,7	50,0
	Important	10	26,3	76,3
	Not That Important	6	15,8	92,1
	Not At All Important	3	7,9	100,0
	Total	38	100,0	
Opportunity cost	Extremely Important	3	7,9	7,9
	Very Important	2	5,3	13,2
	Important	16	42,1	55,3
	Not That Important	12	31,6	86,8
	Not At All Important	5	13,2	100,0
	Total	38	100,0	
Damage cost	Extremely Important	5	13,2	13,2
	Very Important	9	23,7	36,8
	Important	13	34,2	71,1
	Not That Important	7	18,4	89,5
	Not At All Important	4	10,5	100,0
	Total	38	100,0	
Coordination cost	Extremely Important	4	10,5	10,5
	Very Important	7	18,4	28,9
	Important	14	36,8	65,8
	Not That Important	9	23,7	89,5
	Not At All Important	4	10,5	100,0
	Total	38	100,0	
Human resources cost	Extremely Important	7	18,4	18,4
	Very Important	7	18,4	36,8
	Important	11	28,9	65,8
	Not That Important	7	18,4	84,2
	Not At All Important	6	15,8	100,0
	Total	38	100,0	