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Characteristics of the Demand of Transport Service: What Matters to Small and Medium-Sized Industrial Shippers in Brazil?

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Abstract

The objective of this study was to evaluate the relevant factors in the decision making for the hiring and the satisfaction of small size shippers in relation to transport services. The research was developed with 400 companies (with up to 100 employees) of Brazilian manufacturing industry. The results indicated that the constructs of transport services most valued by the shipper companies were, in order, Safety, Reliability, Time, Price, Attention to the special needs of customers and Customer relationship. However, differences were found in priorities, as the groups are oriented by the characteristics of customers. On the other hand, the companies showed they practice the trade off between cost and service level. Like any act of purchasing, the price (freight rate) is relevant, but in the case of transport and logistics in its mission, it was not a variable that prevailed in any cluster. Next to "Reliability" and "Attention to special needs", the "Price" is only a concern of the highest importance as the volume of orders increases. That is, in situations of higher shipment volumes, companies start devoting attention to planning, performance, format of the level of service and price negotiation as the volumes to be handled increases.

Keywords: Transport management; Operations Management; Constructs.

1 INTRODUCTION

At the same time that transport service adds place value to the product/service, the transport activity may represent one to two-thirds of total logistics costs. Thus, an important part of business competitiveness is in the correct design and implementation of transport strategies, with greater or lesser impact, depending on the type of business. Additionally, such a strategy of operations should be aligned with corporate strategy, as highlighted by the seminal article by Skinner (1969). This means to decide on alternatives to service levels (frequency and pre-arranged time for loading and deliveries), ownership of the fleet (own transport or use of third parties') and how to consolidate cargos (lots and location of operations).

For small and medium-sized companies, transport generally involves the largest logistics costs, according to Ng, Ferrin and Pearson (1997). Moreover, it's a process repeated many times in the daily routine of businesses, not only in the purchase of materials but also in the distribution of their products. This context makes critical the transportation management for smaller companies, because at the same time as there isn't usually a specialized management, small and medium companies have little bargaining power in the market, given the volume of their operations (Holter *et al*. 2008). In the Brazilian context, small and medium-sized enterprises (PME's) have highlighted importance, as they represent 99.2% of registered businesses, generate 57.2% of formal employment and account for 20% of Gross Domestic Product (GDP) (Sebrae 2007).

Thus, having as background the impact of transport services in the competitive level of businesses, this study tried to examine the relevant factors in decision taking regarding the hiring and the satisfaction of small-sized shippers in relation to transport services. Although the issue involving the transportation activity and its importance in the logistics business is

developed in aspects of the activity outsourcing and the hiring of operators, it hasn't been registered important gaps regarding the definition of internal processes that lead to the shape of the demand for transport services as well as its specific features for small and medium businesses (Holter *et al*. 2008).

The elucidation of these issues has managerial relevance, as it deepens knowledge about the aspects of transport service, allowing future enhancements in the management process rather than simply isolated acts of purchasing, and also in the academic side, because of the scoping of the study explores important gaps in the field of study, addressing alignment of the transport management as active in the management of business process.

The paper is organized into the following sections, from this introduction. The following section focuses on the management of logistics and transport as part of business strategy, addressing the particularities of small and medium enterprises. Next, we present details of the methodology used and in the following section are presented and discussed the results. Finally, the conclusions, considerations and recognition of limitations are made.

2 LOGISTICS AND TRANSPORTATION MANAGEMENT AS COMPETITIVE FACTOR IN COMPANIES

According to Neuschel and Russell (1998), the demand for transport services has been undergoing transformations resulted from the competitive environment. For the service providers, such changes are perceived in the form of increased competition, the need for integration with service providers of other methods for handling a cargo, the market incentive to new entrants (reflexes of the low barriers to entry), deregulation of markets, which led to

freedom for pricing and aggregate of services, and the severe pressure on price, cost and improving of service by shippers.

For shippers, transport services are, in general, the backbone of the distribution, for they directly impact on customer satisfaction. In a situation of a certain organization with competitive products, logistics (delivery) may negatively impact the overall evaluation (products and added services) made by the client, for example, may involve loss of fidelity or non-repetition of purchase, as the performance of the delivery costs, level of damage, deadline and general consistency of the services (Ballou 2006).

The decisions of transport keep direct and significant interfaces with the financial, production and marketing (customer satisfaction) areas of companies. In the financial perspective, according to Mason *et al*. (2003), empirical studies have shown that the cost of transport reach 2% to 4% of revenues and 30% to 60% of total logistics costs of companies. As pointed out by Holter *et al.* (2008), in addition to direct costs, transport decisions also involve others, such as the formation of inventories, the level of service and production planning.

Decisions of transport interact with the production for both the availability of materials and the finished products. With regard to materials, the efficiency of transport can ensure that the planned production is carried out, with the availability of materials to ensure the implementation of the process. Moreover, compliance with the deadlines agreed with clients will also depend on transport services contracted and executed (Holter *et al*. 2008).

Holter *et al*. (2008) highlighted the difference between the purchase of transport services and transport management. The process of acquisition of transport services is involved in the traditional trade-off between cost and quality, which is the result of the purchasing process

itself. However, the management of transport implies in the monitoring of service desired and acquired, which transcends the boundaries of the company, implying a relationship management with the operator.

Bowersox, Closs and Cooper (2002) suggest that the management of transport is to be performed by the evaluation of transport services based on parameters which allow to demonstrate the performance in, for example:

- Speed: time spent in transit;
- Availability: The ability to serve any origin and destination;
- Reliability: Potential for variation in the service delivery total time;
- Capacity: Condition to handle any cargo and any amount;
- Frequency: The ability to serve at any time.

In order to harmonize transport services with the strategies of logistics and marketing, according to Holter *et al.* (2008), the shippers base the transport management process on the aspects transport costs, transit time, cargo traceability, delivery management and total internal cost to manage the activity.

Transport management in the business environment of smaller size has some peculiarities. Initially, it is worth noting that the management of small businesses have a strong family component and centralized management. The company owner is involved directly in the management of functional activities, transportation among them. According to Gasse (1982), this close contact with all the activities and the fact that the company's vision is heavily concentrated in the owner produces some effects in the management, mainly because entrepreneurs require independence and autonomy.

Gasse (1982) points out that the results of this process are the difficulties to delegate, consult and share activities with others, with the focus directed more toward efficacy than efficiency and an excessive preference on using opportunities rather than planning. That is, one cannot expect a specialized management of transport.

Moreover, according to Holter *et al.* (2008), transport for small businesses also has its specificities. Initially, the shippers offer small volumes to operators, which means, besides direct question of bargaining power in negotiations on price and service levels, higher unit operating costs to the operator, according to McCann (2001). Moreover, the factor "scale" also creates difficulties for building a more harmonious and balanced relationship with transport operators, to allow businesses to internalize the external competences and turn them into competitive strength of their businesses (Grant 2005).

On the other hand, according to Pappu, Mundy and Paswan (2001), the financial conditions of smaller size businesses hamper investment in technological tools that enable the management of transport in the concept elucidated by Holter *et al.* (2008).

3 METHODOLOGICAL DEFINITIONS

This is an empirical and exploratory study that sought to characterize the needs and expectations of shippers regarding the services of companies of road transport in the specific context of Brazilian reality. According to Malhotra (2001), the exploratory research is appropriate in areas of little accumulated knowledge, while the understanding of the phenomena is still insufficient or even nonexistent.

The unit of research analysis refers to the enterprises in manufacturing industry of the state of

Minas Gerais, Brazil, with up to 100 employees, having as base the "Record of employer establishments" (CEE) of the Brazilian Ministry of Labor. The units of observation were the entrepreneurs and managers involved in planning and transport management.

The surveyed companies were characterized by sector of activity within the manufacturing industry, according to the National Classification of Economic Activities (CNAE), developed by National Council of Classification.

The same analysis were developed for groups formed from the guidance of service range required, typically, truckload (TL) or less than truckload (LTL). The research aimed to look for evidence of differentiated behaviors in demand for transport according to scale of operations. The companies were organized into two groups according to sectors of economic activity and typical customers (Table 1).

Table 1 – Groups of shippers, according to transport scale

Groups	Sectors of economic activities	Typical customer	Number of companies
Group 1	Metallurgy, Intermediate Industrialized Goods and Technology	Wholesalers, distributors and industry (orders for greater volume)	112
Group 2	Food and Clothing and Footwear	Retail and consumer end (lower volume orders)	183

Source: Prepared by the authors.

3.1 Sampling and data collection

The sampling process was non-probabilistic judgmental sample. Data collection occurred between February and April 2009, with visits of researchers in 400 companies.

The evaluation of transport considered aspects of the process of hiring of transport services, the constructs that guide decision making and evaluation of services available and effectively

used. The questionnaire included questions that dealt with the constructs and attributes of the transport and was based on the experience of previous studies that have already dealt with the relevant dimensions to evaluating the transport in the Brazilian reality, such as ANTT (2005), and IBRD/ANTT (2006).

The factors that influence both the choice and the evaluation of the service have been prepared according to the following constructs fully supported by the literature such as in Bowersox, Closs and Cooper (2002):

- Time, understood as the time between hiring the service and the effective completion of the contracted service (collection/delivery of cargo);
- Safety (transportation and cargo);
- Reliability of service: variations of effective service in relation to the contract;
- Price;
- Relationship with the customer (service and information exchange with the client);
- Attention to the special needs of the client (the loading/unloading procedures or questions regarding the service to the supplier/customer).

Regarding the choice of the carrier, the shippers were asked to the evaluate with marks (on a scale of 1 to 5) the constructs Time, Security, Reliability, Price, Customer relationship and Service to customers with special needs. This analysis was developed for all companies, to clusters, according to similar behaviors and to groups according to demanded scale transport. These situations will be detailed later on.

For others questions, we used a scale (from 1 to 6) horizontal linear unstructured. This scale was composed of two anchors at the ends – I strongly disagree and I agree completely - so that respondents would give the degree of agreement with the sentences. The advantage of

using unstructured linear scale is the absence of a numeric value along the scale, aiming at higher exemption to responses (Stone and Sidel 1993).

To evaluate possible differences in the behavior of businesses, keeping the particularities of their products, customers and market segments, service standards were defined, prioritizing constructs and attributes of transport, through the use of exploratory factor analysis. Factor analysis can be defined as multivariate statistical technique used to study the interrelationship of observed variables, in order to define a set of common latent dimensions, called factors (Hair *et al.*, 2005).

4 RESULTS AND DISCUSSION

Next, we present the results, starting by groups formed based on the behavior of shippers. Subsequently, these behaviors are appropriately contextualized and discussed as a strategic logistics process.

4.1. Groups of shippers, according to behavior of shippers

Factor analysis of the used variables was validated by the test of sphericity of Bartlett and the Kaiser-Meyer-Olkin (KMO) index. The first tests the probability of the correlation matrix being an identity matrix, which would indicate the inadequacy of factor analysis. The index of KMO measures the adequacy of the sample regarding the correlation of variables. Hair *et al.* (2005) alert for the need of the KMO index to be higher than 0.5. For this study, there was a KMO index of 0.797, which indicates the adequacy of the sample. For the test of sphericity Bartlett, it was checked the significance level of 0.000, which allows to reject the hypothesis of the identity matrix for correlations between variables (Table 2).

Table 2 – Sample adequacy test

Adequacy of Kaiser-Meyer-Olkin sample.		0,797
Test of sphericity of Bartlett	chi-square	2861,961
	GL	253
	Sig.	,000

Source: Research findings

Regarding the definition of the number of factors to be extracted from the variables, we used the latent root criterion, so that each factor could explain, at least, its own variance. Thus, seven (7) factors were found. Each of the seven factors is composed of a set of variables, each one unique to a single factor.

The importance of grouping attributes is due to the possibility of creating dimensions - which here are called factors - which may prove to be important in providing the service. As an example, it is worth mentioning the possibility of having a dimension or factor "Price. This factor could be composed of several variables, not only the price itself, as a discount policy, deadlines, payment methods etc. The technique of factor analysis can then group these elements that will constitute the dimension or factor ‘price’. The set of dimensions explains the whole phenomenon, in this case, what respondents believe to be important in the transport service.

The found factors or dimensions of the model together explain 62.415% of the total variance model. This means that factors formed can explain more than half of what would be considered by companies as important in transport, and this result is statistically significant.

The grouped variables form the seven factors. The first factor is about the care with the cargo and may be motivated by its value and/or the need for strict compliance of contracts. In the second factor, there are two interrelated features, in this case, aspects of communication

between the requester company and the carrier service, and responsiveness of the carrier in solving customers' problems, particularly regarding technical cooperation. The third factor concerns the payment for transportation service, i.e. freight rate, the methods or the need for companies to compete among each other with the purposes of reduction of freight rate. It represents primary concerns, as the costs of service for the shipper. The fourth factor relates to the necessity of cargo to be delivered without damage and in the right time. These are typical variables of relationships that are based on responsiveness, in which errors may be the stop of production or loss of customers. As for the fifth factor, the expressed concern is the priority regarding the regularity and operational flexibility. The sixth factor represents the possibility of control and security of cargo as agreed. Finally, the seventh factor is characterized by prioritizing the transparency and safety in the service delivery.

After the formation of the factors from the factorial analysis, there was the formation of clusters, which represents then the possibility of approaching between factors, on the basis of the choice of a measure of similarity or distance between the observations and of a procedure of groupings based on its measures. The specific objective of this analysis consists in the formation of clusters with characteristics of homogeneity within them and heterogeneity between them, or small variations inside the cluster in relation to the variations between clusters (Dillon and Goldstein 1984).

For purposes of analysis, we chose to limit in advance the number of clusters to five. The choice of five clusters is justified by the possibility of balance between intra-cluster homogeneity and heterogeneity between clusters. In case the option by the number of clusters was higher than five, there would be a possibility of a smaller number of firms per cluster, without attractivity between variables, which would reduce the heterogeneity among clusters. If otherwise, that is, a low number of clusters, there would be a reduction of homogeneity

within the cluster. Since the factors generated in the factor analysis are components of these characteristics, among others that will be used for descriptive analysis, the scores of factors were used for the initial characterization of groups (clusters).

Table 5 indicates the relationship between the factors generated in the factor analysis and the clusters. The values at the intersections in the table represent the scores, so that features can be assigned to groups. Note that a factor in its nature is already composed of variables which express different characteristics. Thus, to be allocated in a number of even smaller groups (five instead of seven), there is the possibility that a single factor is present in two or more groups, as well as a single group having characteristics of two or more factors, as it can be seen in Table 3, in terms of scores.

Table 3 - Scores of attractivity of clusters

Factors	***Clusters***				
	1	**2**	**3**	**4**	**5**
1	0,04927	-2,60505	0,18090	0,23385	0,38112
2	0,10171	-0,22129	0,09641	0,28091	-1,99906
3	0,27830	-0,09229	0,14112	0,04515	-,49748
4	-4,29715	-0,09497	0,14320	0,14001	0,20755
5	-0,86519	-0,14295	-0,02540	0,02541	0,23545
6	-0,35918	0,21292	-2,06737	0,31094	0,06082
7	-0,29469	-0,00521	-,29370	0,10913	-0,35991

Source: Research findings

4.2 Constructs of transportation service according to shippers

In the process of formation of clusters, 16 of the 400 companies in the sample did not show adherence to the formed clusters, therefore, were discarded. Thus, the clusters formed are those presented in Table 4.

Table 4 – C*lusters* formed with the group of companies in the sample

Cluster	Number of companies	Typical clients	Sectors
1	11	Industrial and distribution companies throughout the territory	Metallurgy and Technology
2	32	Local retail	Clothing and Footwear
3	42	General retail, end consumer and industrial companies	Food, Furniture and Intermediate Industrialized Goods
4	263	Retail throughout the territory	Food and Clothing and Footwear
5	36	Wholesalers, large retail and national industries	Metallurgy and Technology
Valid total	**384**		

Source: Research findings

Based on Table 5, in the general average, it is possible to observe that the services constructs of greater importance were the Safety and Reliability. It must be emphasized that the lowest averages were found in the criteria "Relationship with the customer" and "Meeting the special needs of customers" (Table 5).

Table 5 - Evaluation of transport services, according to the constructs and criteria of the clusters

Constructs	Average	*Clusters*				
		1	2	3	4	5
Time	4,45	4,00	4,44	4,24	4,53	4,31
Safety (in transport and cargo)	4,60	3,64	3,75	4,48	4,75	4,75
Reliability	4,59	4,27	4,03	4,48	4,68	4,61
Price	4,34	4,18	4,03	4,43	4,36	4,28
Relationship with the customer	4,23	3,36	4,06	3,79	4,37	4,19
Ability to meet the special needs of customers	4,28	4,09	3,69	3,86	4,42	4,28

Source: Research findings

That is, Safety takes a leading position in the ranking of national companies, which is not a typical situation in more advanced economies. According to Meixel and Norbis (2008), the most followed criteria in the hiring of transport services, worldwide, are Trust in the service, Time in transit (time) and Logistics costs in the foreground, followed by Index of damages, Availability of vehicle/flexibility of service, Customer service, Shipping and Quality Service.

We should consider that the relevance of this concern may reflect the systemic conditions of

the poor quality of Brazilian infrastructure, which causes damages and accidents, as well as a low level of service accessed by companies which reflects the lack of availability of safer services, delays in shipping by the shipper or even lack of financial capacity to pay for a better service. In developed economies there is a faster adaptation of carriers to the services needed by the shipper, through the use of technological resources, such as the use of bar codes on packages and vehicle tracking, as well as a better capacity of logistics planning and payment for services.

However, Table 9 indicates a few differences between the groups. Cluster 1, comprised of companies whose typical customers are Industrial and distribution companies throughout the country, has as most relevant factor the Reliability in the service provided by carriers and in the opposite direction of the other clusters, attributes – along with construct relationship with the client - to security (in the shipping and cargo) less importance. This same trend in giving security a lower average is found in cluster 2, formed by companies that serve the local retail, which also attaches less importance to the ability of Meeting the special needs of customers. These elements give the idea that for companies included in these clusters, the reliability of service is not related to the security of cargo and transportation, being restricted to the requirements of the delivery (deadlines).

Unlike the first two clusters, cluster 3, which has as typical clients the local retail located anywhere in the country, the end consumer and industrial companies, gives more importance to the Safety factor - along with the Reliability. For companies in this cluster, the least important factors are the additional values aggregated by carriers to service to end customers, so that the constructs Customer relationship and Meeting the special needs of customer present lower average. Also, there are 4 clusters, formed by companies whose clients are retailers throughout the country, and 5, that has as customers the wholesalers, large retailers

and national industries, which are similar to cluster 3, giving to Reliability and cargo and transport Safety more importance.

However, the evaluations are consistent regarding the assessment of price in decision making. Like any act of purchase, the price (freight rate) is relevant, but in the case of transport and logistics and their attribution in logistics, it was not a variable that prevailed in any cluster.

On the other hand, it can also be said that the characteristics of services vary. As the volume of order increases, shippers become more demanding about the performance of the constructs "Reliability", "Price" and "Attention to special needs" (Table 6). This finding was obtained from the positive correlations found between these constructs.

Table 6 - Correlation volume of order *versus* average deadline of service and general assessment

Constructs of transport service	*Clusters*				
	1	**2**	**3**	**4**	**5**
Time	0,443	-0,045	-0,039	-0,015	-0,067
Safety	-0,170	-0,030	0,048	0,053	-0,147
Reliability	-0,205	0,252	0,024	0,078	0,098
Price	0,393	0,423	-0,137	0,021	-0,007
Relationship with customer	-0,089	0,092	0,080	-0,003	-0,069
Attention to special needs	-0,046	-0,051	0,149	0,086	0,124

Source: Research findings

In other words, companies devote attention to planning, performance, format of the level of service and price negotiation as the volumes to be handled increases. Then the transport becomes more important in the shipper's viewpoint.

Shippers signal that transport becomes strategic only when high financial values are being transported as goods, and not as part of the logistics process itself. On the other hand, such situation refers to a mistaken belief that logistics is strategic only for big businesses, and having, only in these cases, strategic character.

Furthermore, differences were found when the analysis passed on to clusters. For companies in cluster 1, the increase in order increases the importance of the constructs Time and Price. For companies in cluster 2, the importance increases to the constructs Reliability, Price and Customer Relationship. Among the companies in cluster 3, there isn't a direct relation only to the constructs Time and Price. Likewise, companies in cluster 4 did not increase the level of demand with the increased order in the variables Time and Customer Relationships. Finally, companies in the cluster 5 are more demanding in constructs Reliability and Attention to special needs of customers (Table 6).

Besides the importance of attributes in the choice of carrier, it was also necessary to verify the satisfaction of service provided. Table 7 illustrates the overall assessments and the clusters' to each of the attributes evaluated on a scale from 1 to 5.

Table 7 - Satisfaction with transport, according to evaluation of Shippers clusters

Constructs	Attributes	General Average	*Clusters*				
			1	2	3	4	5
Time	Time to quote deadline, specification and price	**3,96**	3,03	3,79	3,95	4,03	3,76
	Time to start service	**4,20**	3,37	4,00	4,13	4,35	4,00
	Time to deliver the product	**4,25**	3,34	3,82	4,53	4,35	4,34
Safety	Low level of cargo damage	**4,46**	3,12	4,86	4,28	4,57	4,30
Reliability	Meetings the deadlines	**4,13**	2,98	3,83	4,28	4,25	4,08
	Percentage of on-time delivery	**4,50**	3,36	4,36	4,63	4,64	4,42
Price	Price	**4,13**	3,91	3,97	4,41	4,14	4,21
Relationship with customer	Willingness to listen and act in case of failure/problem communication	**3,83**	3,26	3,54	3,96	3,96	3,66
	Information on the status of the cargo	**3,88**	2,69	3,61	3,85	4,07	3,47
	Polite and corteous service	**4,58**	3,74	4,51	4,74	4,69	4,29
	Service to any state of Brazil	**3,94**	3,44	3,67	4,49	3,96	3,55
Attention to special needs	Development of services according to specifications	**4,31**	3,07	4,18	4,51	4,38	4,32
	General Average	**4,18**	**3,28**	**4,01**	**4,31**	**4,28**	**4,03**

Source: Research findings

The data indicate that the attributes with better assessment regarding services currently provided are the "polite and courteous service, the consistency of services in relation to

deadlines, expressed in "percentage of on-time delivery", the "low level of damages to cargoes" and the occurrence of "services as specified". However, the relationship with the carrier can be significantly improved in the aspects of "willingness to listen and act in the event of failure" and "information about the status of the cargo", as well as the capillarity of the service (" service to any state of Brazil").

The general evaluation of the transport service received the lowest average among the companies in cluster 1 and highest in clusters 3 and 4. Some differences among the clusters can be identified from the data gathered in Table 7. The first of these was mentioned, in which cluster 1 evaluates in a less positive way almost all the attributes when compared to the other clusters. Regarding the "time to start service", the companies in cluster 4 assess more positively. In relation to the "time to deliver the product," the more positive assessment comes from cluster 3. The attribute "willingness to listen and act in case of communication failures / problems" presents the worst rating among the attributes and are also less important for clusters 3 and 4.

4.3 Constructs of transportation service oriented by the scale of transport demand

We tried to identify possible differences with regard to the importance of the constructs of the transport service, according to the format of the service guided by the scale of transport – truckload-TL (Group 1) or less than truckload-LTL (Group 2). In this case, the average scores indicate that companies that serve the retail and end users, such as Group 2, tend to give more emphasis on factors related to service, showing more concern about the possible occurrence of problems with the level service. For companies in Group 1, because they serve larger companies, when it is more relevant to maintain in the chain of the business the meeting of deadlines, service at the appointed time for unloading and integration of lean production systems, the Safety factor is more valued, also highlighting the greater relative importance of

the constructs Customer Relationship and Attention to the special needs of clients (Table 8).

Table 8 - Importance of constructs of transportation service for the groups

Constructs	Group 1	Group 2
Time	4,51	4,32
Safety (transport and cargo)	4,63	4,60
Reliability	4,64	4,55
Price	4,33	4,18
Customer Relationship	4,29	4,34
Attention to the special needs of clients	4,32	4,52

Source: Research findings

Shippers signaled to a high level of satisfaction with the courteous service received and the level of damage, in the foreground, and to services to be developed within the presented requirements and consistent delivery regarding time. However, the relationship of carriers with the companies is not well evaluated, particularly when they seek to communicate failures, obtain information and quote on cost and other variables of the service, such as deadlines.

The results indicate that the evaluations of the companies in Group 1 are higher than those of Group 2 in almost all the constructs, confirming the previous analysis (Table 9). That is, companies whose customers are wholesalers, distributors and industries are more satisfied about the transport, indicating that the relationships in these segments can evaluate the transportation as a strategic activity, as it is the practice of these sectors to select suppliers based on performance in several criteria, logistics among them. Thus, the transport appears to be planned and integrated with the business strategy of companies.

Table 9 – Satisfaction in relation to attributes of transportation service to the Groups

Attribute	Group 1	Group 2
Time to quote deadline, specification and price	4,34	3,51
Time to start service	4,24	3,95
Time to deliver the product	4,43	3,94
Willingness to listen and act in case of failure/problem communication	4,07	3,30
Meeting the deadline	4,27	3,93
Development of services as specified	4,32	4,41
Low level of cargo damage	4,66	4,25
Information on the status of the cargo	3,82	3,18
Polite and corteous service	4,78	4,29
Price	4,37	4,04
Percentage of on-time deliveries	4,60	4,40
Service to any state in Brazil	4,05	3,75
Average	**4,33**	**3,92**

Source: Research findings

5 FINAL CONSIDERATIONS

The objective of this study was to evaluate the relevant factors in the decision making for the hiring and the satisfaction of small size shippers in relation to transport services. The motivation is that there are important gaps regarding the definition of internal processes that lead to the shape of the demand for transport services as well as its specificities to small and medium businesses.

The results indicated that the constructs of transport services most valued by the shipper companies were, in order, Safety, Reliability, Time, Price, Attention to the special needs of customers and Customer relationship. Thus, the companies expect that the performance of transport does not jeopardize the relationship with their customers.

On the other hand, the companies showed they practice the trade off between cost and service level. Like any act of purchasing, the price (freight rate) is relevant, but in the case of transport and logistics in its mission, it was not a variable that prevailed in any cluster. Next to "Reliability" and "Attention to special needs", the "Price" is only a concern of the highest

importance as the volume of orders increases. That is, in situations of higher shipment volumes, companies start devoting attention to planning, performance, format of the level of service and price negotiation as the volumes to be handled increases. In general, the transport appears to be strategic, demanding attention, just when it is the support for operations of high financial values.

This leads to the conclusion that, in general, there isn't a defined strategy for transport or even for logistics. These activities are only decisions implemented at the tactical and operational levels, which can be seen when the transport services were analyzed as oriented by the scale of demand for transport. The relationship with the carrier and willingness to implement alliances becomes important only in cases in which companies serve larger clients, when it is more relevant to stay in the chain of the business the meeting of deadlines, service at the appointed time for unloading and integration in lean production systems, since it is the practice in these sectors to select suppliers based on performance in several criteria, logistics among them.

That is, they seek partnerships, extending the need to form strong partnerships to also solidify their position in the chain. In these cases, companies are more satisfied regarding transport services, indicating that more collaborative and close relationships directly involve planned transportation services integrated into the business strategy of companies. In general, the focus on transport is of a typical purchase of the company, and not as a component of logistics, a possible source for the definition of company strategy. Purchasing management is made and not transport management.

Although the knowledge gap regarding logistics strategies specific to the universe of small and medium businesses has motivated this research, it is recognized as limitations to this

study the difficulty to contextualize it in the wider business community. Therefore, it is recommended that studies of this nature should also be developed for larger companies so that there is an adequate analytical contrast and that it enhances a deepening in the theme in the academic area in Brazil.

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