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# PERCEPTUAL DIFFERENCES BETWEEN MOTOR CARRIERS AND SHIPPERS REGARDING THE IMPORTANCE OF CARRIER SELECTION CRITERIA

by

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## ***Introduction***

Expectations are that in the nineties even more attention will be paid to satisfying consumer preferences. In all likelihood, this trend will extend to the unregulated motor carrier industry. An effective marketing strategy results in consumer satisfaction for profit. Shipper satisfaction is a function of carriers providing a selection variable mix which best serves shippers. In the transportation industry much less has been done to determine the nature of understanding that carriers have regarding the most significant selection variables as perceived by shippers. According to the literature, few carriers appear to really know what factors actually influence the shipper's choice of carrier. In fact, previous studies have found that the carrier choice decision may be regarded by shippers and carriers in a much different manner. Specifically, some shippers and carriers appear to have very different notions of what it is that constitutes satisfactory service by carriers.

In the 1973 Bardi study, representatives of a number of firms were surveyed to determine the relative importance of 21 carrier selection determinants. This study revealed that there was general agreement on five of the most important determinants, but there was disagreement regarding many of the remaining variables.<sup>1</sup> Evans and Southard's 1974 study of manufacturers, wholesalers, retailers and motor carriers in Oklahoma investigated how shipper and carrier perceived 28 factors, thought to be important in the selection decision. Respondent evaluations were measured on a five-point scale. Perceptions were then compared by means of t-tests. Evans and Southard found that there were six perceptual differences between shippers and carriers.<sup>2</sup>

In 1978, Jerman, Anderson and Constantin presented the results of their survey of individuals at the operations level in both shipper and carrier organizations. Each was asked to assess the importance of 26 variables believed to be important in the carrier selection decision making process. Differences in the perceptions of both groups were identified for 12 selection variables.<sup>3</sup> The authors also explored the perceptions of a group of traffic managers, sales managers, and sales representatives with regard to 15 carrier selection variables. Perceptions were measured with a five-point scale. Mean differences were isolated by way of multivariate and univariate ANOVA. Significant differences between shippers and carriers were found for seven of the fifteen variables.<sup>4</sup>

Of the above cited empirical research, only the Evans and Southard study sampled both shippers and carriers and specifically investigated the variables related to the selection of motor carriers. This study seeks to expand on previous studies and provide the information necessary for carriers to better understand the importance of various selection criteria to shippers. Specifically, this research attempts to determine the factors that influence carrier selection, and how both carriers and shippers differ in relation to the importance they place on these variables. A systematic sample of traffic managers and motor carrier

sale managers provided the data base for this study. The sample of traffic managers was composed of individuals employed by various manufacturing, wholesaling and retailing organizations and was drawn from The Official Directory of Industrial and Commercial Traffic Executives. This directory contains the names and addresses of 24,000 traffic managers. The motor carrier sales manager sample was drawn from motor freight trucking companies. The sampling frame used for the selection of the sales managers sample was a list of 18,446 motor carriers supplied by American Business List Inc.

A mail questionnaire was chosen because of the time necessary to complete the questionnaire and the geographic dispersion of the respondents. Questionnaires were mailed to 500 shipper traffic managers and 500 carrier sales managers. Of those queried, 119 shippers and 103 carriers responded. The number of usable questionnaires was 102 and 94, respectively. The usable responses comprised 20.4 percent and 18.8 percent of the survey population, which should provide a reasonably accurate representation of the actual population.

Only nationwide motor carriers were surveyed. These carriers estimated that the majority of their shipments were truckload. The averages for the sample were 68 percent TL shipments and 32 percent LTL shipments. However, it should be noted that these percentages are averages of the total sample of respondents' estimations. The sample population may well haul special commodities, but this information was not specifically addressed in the survey.

Of the shippers responding 31 percent were food producers, 23 percent were producers of home products, 21 percent produced industrial goods destined for further processing, 7 percent produced electronics products, 3 percent of the respondents produced chemicals, and 15 percent classified themselves as "other" types of producers. Seventy-three percent of the shipper sample stated that they normally ship in large lot sizes.

Previous studies used a varying number of carrier selection criteria. Therefore, it was logical to draw from previous work in selecting the criteria to be included in the survey. Once variable repetition was eliminated 35 possible selection criteria, which were thought to be used by shippers in their motor carrier selection decisions, were isolated (see Table 1).

Both carriers and shippers were queried regarding 35 variables commonly thought to be important in the carrier selection decision. A scale was used to indicate the importance of each of these factors to both shippers and carriers. Shippers were asked to rate these factors in their own motor carrier selection decision. Carriers were also asked to rate the factors indicating the carrier's perception of the importance of these factors to shippers. The following scale was used:

1. Not important
2. Slightly important
3. Moderately important
4. Very important
5. One of the most important factors

### ***Perceptual Differences Between Shippers and Carriers Regarding Motor Carrier Selection Decisions***

Initially, descriptive statistics in the form of frequency and crosstabulation tables were computed. These calculations were performed to get a "feel" for the data. Then, a comparison was made to determine if a difference existed between the perceptions of shippers and carriers regarding 35 motor carrier selection criteria. Analysis of variance was used to compare the perceived importance assigned to each selection criteria by both shippers and carriers. A mean rating score was calculated for each of the factors for both carriers and shippers. These responses were compared, and an "F" statistic computed. In all

cases a significance level of .05 was used. The variables with a statistically significant difference between the perception of shippers and carriers are identified by asterisks. In order to evaluate the level of satisfaction provided shippers by carriers an analysis of the importance of various selection criteria to shippers was conducted. The statistically significant mean ratings and rankings for both shippers and carriers were analyzed and the overall results presented in Table 1.

A comparison of both shipper and carrier rankings revealed that only six carrier selection variables were ranked exactly the same by both groups. A review of the information in Table 1 further revealed that there was general agreement on the relative importance of sixteen of the thirty-five selection variables. However, statistically significant differences resulted between shipper and carrier mean ratings for nineteen of the thirty-five selection criteria. Only four of the nineteen statistically significant selection variables were rated higher by shippers. The other fifteen statistically significant selection factors were rated higher by carriers.

Carriers ranked only two of the shipper's ten most important selection variables similarly. Only three of these ten variables were statistically significant. Two of these factors were rated higher by shippers than by carriers. The fact that carriers were not as concerned as shippers with emergency response and providing leadership in offering more flexible rates, could well result in shipper dissatisfaction. Not only was the emergency response issue statistically significant, but it was ranked third by shippers and eighteenth by carriers. The ranking discrepancy of the rate flexibility issue was even greater, with a shipper ranking of seven and a carrier ranking of twenty-five. The likelihood of shippers being dissatisfied is heightened because these criteria are among the ten most important variables as ranked by shippers.

**Table 1****Summary of Findings: Perceptions of Shippers & Carriers Regarding The Importance of Carrier Selection Variables**

<b>Carrier Selection Criteria</b>	<b>Shipper Mean Rating</b>	<b>Carrier Mean Rating</b>	<b>Shipper Ranking</b>	<b>Carrier Ranking</b>
Reliability of on time delivery.	4.41	4.50	1	1
Reliability of on time pick-up.	4.32	4.44	2	2
Total transit time for the shipment.	4.21	4.15	3	10
Carrier response in emergency situations.	4.21*	3.74	3	18
Financial stability of carrier.	4.14	4.07	5	11
Handling expedited shipments.	4.12	4.18	6	9
Carrier's leadership in offering more flexible rates.	4.11*	3.33	7	25
Carrier reputation for dependability.	3.94	4.44*	8	2
Geographic coverage of carrier.	3.87	4.05	9	12

\*variables were found to be statistically significant at the .05 level.

Table 1 continued

Carrier Selection Criteria	Shipper Mean Rating	Carrier Mean Rating	Shipper Ranking	Carrier Ranking
Discount programs offered by carriers.	3.81	3.79	10	17
Carrier cooperation with shipper's personnel.	3.79	4.37*	11	4
Condition of equipment (cleanliness).	3.79	4.05*	11	12
Past performance of the carrier.	3.75	4.20*	13	8
Ease of claim settlement. (loss or damage)	3.75	4.02*	13	14
Freight loss experience with the carrier.	3.73	3.82	15	16
Carrier representative's knowledge of shippers needs.	3.69	4.37*	16	4
Scheduling flexibility.	3.68	3.69	17	19
Freight damage experience with the carrier.	3.64	4.30*	18	7
Carrier assistance in obtaining rate or classification changes.	3.54	3.65	19	21

\*variables were found to be statistically significant at the .05 level.

Table 1 continued

Carrier Selection Criteria	Shipper Mean Rating	Carrier Mean Rating	Shipper Ranking	Carrier Ranking
Carrier attitude toward acceptance of small shipments.	3.53*	2.76	20	31
Carrier honors shipper's routing requests.	3.45	3.17	21	26
Computerized billing and tracing services.	3.44	3.17	22	26
Personal relations with the carrier.	3.44	3.95*	22	15
Overcharge claims service.	3.35	3.37	24	24
Courtesy of vehicle operators.	3.33	4.35*	25	6
Feedback from the consignee to the shipper about the quality of service given by specific carriers.	3.24	3.69*	26	19
Information provided to shippers by the carrier.	3.07	3.62*	27	22
Carrier transportation equipment designed to facilitate easy and fast loading and unloading.	3.02*	2.61	28	33

\*variables were found to be statistically significant at the .05 level.

Table 1 continued

Carrier Selection Criteria	Shipper Mean Rating	Carrier Mean Rating	Shipper Ranking	Carrier Ranking
Carriers ability to handle special products.	2.99	3.07	29	29
Diversion and reconsignment privileges.	2.79	2.81	30	30
Regular calls by carrier sales representatives.	2.74	3.60*	31	23
Opinions or recommendations of employees of other firms.	2.46	3.16*	32	28
Carrier willingness to participate in freight consolidation practices.	2.39	2.44	33	35
Fabrication in transit privileges.	2.10	2.51*	34	34
Gifts/gratuities offered by carriers.	1.46	2.62*	35	32

\* variables were found to be statistically significant at the .05 level.

The next statistically significant variable ranked higher by shippers than carriers, dealt with the carrier's attitude toward small shipments. Shippers ranked this variable twentieth, while carriers ranked the variable thirty-first. Such ranking discrepancies combined with statistically significant rating differences could result in additional shipper dissatisfaction.

Although providing transportation equipment designed to facilitate easy and fast loading and unloading was also statistically significant, and ranked higher by shippers than carriers, the actual ranking was twenty-eighth by shippers and thirty-third by carriers. Even though there is a statistically significant difference, this criteria is ranked so low that it is probably less of a priority for shippers than are the other three selection factors.

As was previously mentioned, carriers rated fifteen statistically significant selection factors higher than did shippers. Surprisingly, carriers ranked their representative's knowledge of shipper needs as the fourth most important carrier selection variable. However, there was a statistically significant difference between the ratings of shippers and carriers with regard to this variable. Carriers rated this selection factor higher than did shippers, but apparently are not striving hard enough to really understand actual shipper needs.

The majority of the remaining selection criteria, where statistically significant differences appeared and where carrier mean ratings were higher than shipper ratings, are tied to past performance and having established relationships with customers. Carriers rated reputation for dependability, carrier cooperation, past carrier performance, ease of claim settlement, freight damage experience, personal relations, courtesy of vehicle operators, feedback concerning quality service, information provided to shippers, regular calls by carrier sales representatives, and opinions and recommendations of employees of other firms, higher than did shippers. Carriers also

ranked all but one of these selection variables higher than did shippers. Carriers appear to be primarily concerned with emphasizing previous performance factors and with nurturing past relationships which led to successful carrier operations.

Only three of the statistically significant variables which were rated higher by carriers than shippers, were not directly related to past performance or customer relations. Condition of equipment, fabrication in transit privileges, and gifts and gratuities offered by carriers are costly, and probably do not significantly enhance shipper satisfaction, as would increased emphasis on other more highly rated factors. Even though the rankings for shippers and carriers of the condition of equipment were eleventh and twelfth, the statistically significant difference indicates that carriers are overemphasizing this factor. Possibly carriers are increasing their operating costs unnecessarily, thus limiting their ability to respond to the more significant needs of shippers. Fabrication in transit privileges and gifts and gratuities were ranked quite low by both groups which may present an opportunity for carriers to de-emphasize these criteria somewhat.

### ***Summary of Differences, Causes, and Methods of Overcoming Differences***

As was previously mentioned, an effective marketing strategy results in consumer satisfaction for profit. Shipper satisfaction is a function of carriers providing a selection variable mix which best serves shippers. In order to evaluate the level of satisfaction provided shippers by carriers an analysis of the importance of various carrier selection criteria is essential. Areas where statistically significant differences were evident should be of major concern to carriers. Recognizing the existence of these differences, and possible causes of each difference affords the carrier an opportunity to develop more effective strategies to better serve shippers. A comparison of both shipper and

carrier rankings revealed that only six selection variables were ranked exactly the same by both groups. Statistically significant differences resulted between shipper and carrier mean ratings for nineteen of the thirty-five selection criteria.

Only four of the nineteen statistically significant selection variables were rated higher by shippers. Shippers rated carrier response in emergency situations, carrier's leadership in offering more flexible rates, carrier attitude toward acceptance of small shipments, and providing transportation equipment designed to facilitate easy and fast loading and unloading, higher than did carriers. It is interesting to note that of the four variables which were ranked higher by shippers, and were also statistically significant, one was related to rates, and three were related to specialized services. These differences could be caused by carriers clinging to the trappings of the regulated motor carrier environment, where rates and services were contingent on many factors, none of which involved consumer satisfaction as a carrier priority. Obviously, these differences could have a significantly negative impact on shipper profitability. Since carrier selection decisions are often made to maximize gains an inappropriate mix could result in lost business for carriers who misinterpret the importance of these selection factors. These differences and the resulting shipper dissatisfaction could be overcome by offering a selection variable mix which offers these services, and provides for rate flexibility based on the specific needs of individual shippers.

Carriers rated fifteen statistically significant selection factors higher than did shippers. Carriers rated reputation for dependability, carrier cooperation, past carrier performance, ease of claim settlement, freight damage experience, personal relations, courtesy of vehicle operators, feedback concerning quality service, information provided to shippers, regular calls by sales representatives, and opinions and recommendations of employees of other firms, higher than did shippers. These differences may be caused by carriers resting on their laurels, and placing too much emphasis on past relationships, rather

than being responsive to current shipper needs. In a deregulated environment this strategy may well invite disaster. Equipment condition, fabrication privileges, and gifts were rated higher by carriers than shippers, but were not directly related to past performance or nurturing relationships. Overemphasizing any or all of these selection factors is costly and probably does not significantly enhance shipper satisfaction. Quite possibly carriers overemphasize these factors because shippers are prone to select carriers based on their past performance record and established relationships with shippers. However, shippers may well change carriers if they are not responsive enough to their actual needs, especially those needs that are most important. An opportunity exist for carriers to overcome these differences by de-emphasizing the above criteria somewhat, and using any recovered resources to reformulate their selection variable mix.

The basic method of overcoming these differences involves the development of a reformulated mix which focuses on offering shippers better response in emergency situations, acceptance of small shipments, and providing real leadership in offering more flexible rates. If additional resources were available the reformulated mix would incorporate carrier equipment designed to facilitate easy and fast loading and unloading. Basically, the new mix should enhance the quality of service and profit picture of shippers in the carriers' target market.

### *Implications*

Carriers, in the survey group, ranked their representative's knowledge of shipper needs as the fourth most important carrier selection variable, but apparently are not striving hard enough to really understand shipper needs. A lack of understanding could make it impossible to effectively serve shippers. Carriers should strive to appreciate the importance of various selection criteria to their target markets, and develop a market-

ing strategy to properly address these needs. A superior carrier strategy emphasizes a mix of selection variables in line with the importance placed on them by shippers. Structuring a service system which places too much emphasis on the less significant variables, and deemphasises the more significant selection variables will lead to shipper dissatisfaction, and subsequent carriers losses.

For motor carriers aspiring to provide their customers with the highest possible level of satisfaction, an understanding of the most important criteria used by shippers in selecting and retaining carrier services is essential. Since there were significant differences between the perceptions of this group of carriers and shippers regarding the relative importance of the selection criteria, carriers may not be satisfying shippers to the greatest degree possible. To overcome these differences carriers should take the forefront by providing leadership and innovation in relation to their selection mix, rather than keying on what they did in the past. Carriers may well have been selected because of their past performances and relationships, but shippers may not continue to utilize their services if carriers are not more responsive to actual shipper needs. Specifically, carriers should identify and emphasize those elements of their selection mix that are perceived as most important by the decision makers in the shipping organization. Carriers who are able to establish which of the selection criteria are most important are better able to develop a selection variable mix which will more thoroughly satisfy shipper needs, and thereby attract new customers and maintain existing clients.

## **References**

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