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ASSESSMENT OF CUSTOMER SATISFACTION IN PUBLIC TRANSPORT COMPANIES

ABSTRACT

The paper deals with customer satisfaction with regards to mass urban traffic enterprises. The paper stresses the importance and tasks of the research, preparatory stage of the research is explained, special attention is devoted to the questionnaire construction. The paper describes realisation of the research, informing about research methods, contact methods, respondents sample and research tools that were used. Research results are presented in tables providing information on consumer priorities and enterprises performance evaluation. The CSI methodology and stipulation is also described here.

KEY WORDS

quality criteria, transport service, market research of customer satisfaction, customer satisfaction index

1. INTRODUCTION

Monopoly market position of urban public transport companies in the market of transport services cause that the companies pay inadequate attention to customers needs. Consequences of this status are daily borne by their customers. Customers and their satisfaction must become the prime goal for urban public transport companies in the process of deciding about the range of offered transport services. For this reason it is necessary for the companies to get to know their customers better through market research. It enables them to find the customers needs and views on quality and complexity of offered services. Qualitative elements are just those ones of the highest importance in deciding whether to use or not the offered transport services. At this time the urban public transport companies do not do such market research although it is neither time- nor money-consuming.

Market research on the customer satisfaction with the services of public transport companies can be divided into several stages. It is important to handle each stage with the same importance.

2. PREPARATORY STAGE OF THE MARKET RESEARCH / PLANNING OF COLLECTION OF PRIMARY DATA

Collection of primary data requires clearing of all issues related to its organization. The key issues are the following:

Research method	Contact method	Representative sample	Research tools
Interview Observation Experiment Panel	Post Phone Personally	Structure Size Method of its creation	Questionnaire Technical instruments

Researchers have to decide which research method will be used, how the respondents will be contacted, what structure and size of the sample will be chosen and what tools will be used for collecting the data.

In addition, it is necessary to decide what method will be used for the assessment of customers satisfaction and which one for the evaluation of the research.

Should the information which we want to acquire from the market research be usable for reaching the goal of the research, it is necessary to pay adequate attention to the designing of the questionnaire. The set of evaluating criteria of the company performance should reflect the criteria which determine the quality of transport services. These criteria are supplemented by others so that performance of a transport company could be evaluated in a complex way. The questionnaire is focused on the following two main areas: to reveal customers priorities and to evaluate company performance.

The first part of the questionnaire is focused on revealing the *customers priorities*. The requirements which may be of high importance for the customer of a transport company are indicated in the questionnaire. Customers assign values to these requirements on the

scale from 1 to 10, according to which 10 means the highest priority and 1 means irrelevant.

The second part of the questionnaire is focused on the evaluation of the *company performance*. In this part of the questionnaire the customer assesses the company performance, in other words, indicates to which extent the company satisfies his requirements. Customers assign values to these criteria on the scale from 1 to 10, according to which 10 means the best performance and 1 means the worst performance.

3. RESEARCH STAGE

For the verification of methodology of the research, the research on customers satisfaction was tested by a pilot project.

Interview was chosen as a *research method* from the above mentioned methods. It is supposed to be the most important method for acquiring information within primary research.

Personal contact was chosen from the set of *contact methods,* based on comparison of advantages and disadvantages of particular methods.

Respondents of the market research were passengers using services of urban public transport companies in the total number of 100 respondents.

Questionnaire was chosen as a *tool* and was filled in directly by the respondents supervised by the researcher.

Multi-attributed method was chosen as a method for assessment of customers satisfaction. *Numerical evaluation* method was used for the assessment of the market research.

4. PROCESSING AND ANALYSIS OF THE RESEARCH RESULT

For processing of the first part of the questionnaire, the arithmetic average was used to reveal the value of customers priorities. The arithmetic average was calculated as follows:

$$\overline{EIC_i} = \frac{\sum_{j=1}^{n} EIC_i}{n} \quad (1)$$

EIC_i – evaluation of the importance of the criteria i

n – number of respondents (100)

The final average values of each criteria are presented in the 1st column of Table 1.

Average value of importance of all the chosen criteria is calculated as arithmetic average of all the average values of individual criteria:

$$\overline{EIC} = \frac{\sum_{i=1}^{m} \overline{EIC_i}}{m} \quad (2)$$

m – number of criteria (34)

The average value of 7.51 indicated in the last row of the 1st column shows that all of the criteria present high priorities for the customer (maximum value is 10).

The same method was used for processing the second part of the questionnaire, in which the respondents evaluated the company performance in particular criteria. The *average values of company performance* are calculated in the 3rd column as arithmetic average of all respondents evaluations:

$$\overline{CCP_i} = \frac{\sum_{j=1}^{n} CCP_i}{n} \quad (3)$$

CCP_i – value of i-th criterion of company performance

The 1st column of the table implies that the passengers using transport services within urban public transport give the highest priority to accuracy - arrival and departure of the vehicles. Other factors which are important from the customers' point of view are safety, reliability, availability of timetables at the bus-stops, price, identification of the vehicles etc.

The 3rd column implies that the best assessed criteria of evaluation of the company performance are the following: identification of the vehicles, timetables at the bus-stops, safety and link locations. The criteria with lowest attributed value is the complaints and requests handling.

The highest customers priorities as well as the company performance in particular activities can be presented in a simple graph diagram. The graph diagrams are very representative, comprehensible and provide good orientation at the first glance.

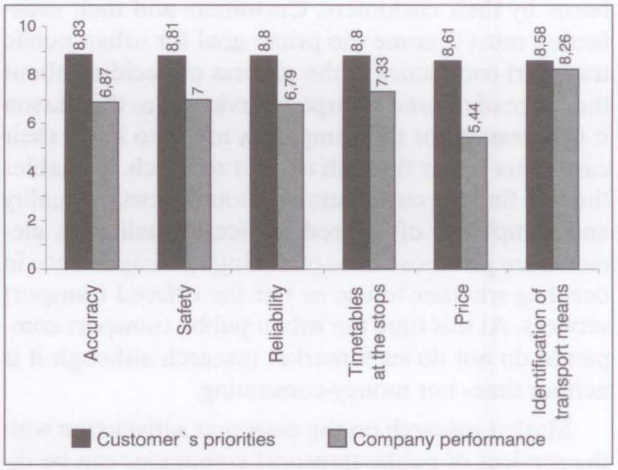

Figure 1 - Customers priorities and company performance

Table 1 - Customers priorities and company performance

Criteria	Customers priorities		Company performance	
	Evaluation of significance $\overline{EIC_i}$	Coefficient of significance ci_i	Average $\overline{CCP_i}$	Weighted average $\overline{CCP_{i(ci)}}$
a) Quality of transport service				
1) Comfort	7.27	0.97	6.46	6.25
2) Number of seats	6.88	0.92	6.61	6.05
3) Waiting time	8.43	1.12	6.53	7.33
4) Time of transport	7.83	1.04	6.58	6.86
5) Operational time of the links	6.97	0.93	6.35	5.89
6) Optimality of links location	7.29	0.97	6.97	6.76
7) Regularity of links	7.20	0.96	6.79	6.51
8) Frequency of links	7.27	0.97	6.57	6.36
9) Links interconnection	6.78	0.90	5.92	5.34
10) Accuracy	8.83	1.18	6.87	8.07
11) Safety	8.81	1.17	7.00	8.25
12) Reliability	8.80	1.17	6.79	7.95
b) Sale-points				
1) Number of sale-points	6.88	0.92	6.96	6.37
2) Local availability	7.07	0.94	6.78	6.38
3) Time availability	7.18	0.96	6.14	5.87
4) Number of ticket machines	7.39	0.98	6.35	6.25
5) Placement of ticket machines	7.29	0.97	6.46	6.27
6) System of tickets sale	6.89	0.92	6.75	6.19
7) Sale of other products	5.61	0.75	6.24	4.66
c) Price				
1) Price level	8.61	1.15	5.44	6.23
2) Discounts	8.33	1.11	5.74	6.36
3) Payment methods	6.53	0.87	5.84	5.08
d) Relations to environment				
1) Culture of stops (cleanliness)	7.68	1.02	5.07	5.18
2) Passenger safety	7.72	1.03	5.59	5.74
3) Measures for environmental protection	7.89	1.05	6.12	6.43
e) Communication. information				
1) Timetables at the bus-stops	8.80	1.17	7.33	8.58
2) Timetables for sale	6.56	0.87	5.80	5.06
3) Maps	6.56	0.87	5.15	4.50
4) Identification of vehicles	8.58	1.14	8.26	9.43
5) Promotion of a new line	6.40	0.85	5.63	4.80
f) Human factor				
1) Behaviour of drivers	7.66	1.02	6.19	6.31
2) Behaviour of sales personnel	7.51	1.00	6.30	6.30
3) Behaviour of ticket conductor	8.14	1.08	5.28	5.72
4) Approach to customers complaints and requests	7.83	1.04	4.72	4.92
Total:	255.47			214.2
Average:	7.51			6.3

This can also be used to compare the customers priorities and company performance if both of these values are included in one graph diagram. The following picture shows to what extent the company fulfills the customers expectations in those criteria which are the most important for the customer.

The graph diagram shows that the biggest difference between customers priority and the company performance is in the price. It implies that the price is a highly evaluated criterion (average value 8.61), but the company meets this requirement only to 50% (evaluation of this criterion is 5.44). On the other hand, the lowest difference between customers priority and the company performance is in the identification of the vehicles, which means that they are relatively well labelled.

5. DETERMINATION OF THE CUSTOMER SATISFACTION INDEX (CSI)

In order to calculate the customer satisfaction index (CSI), the coefficients of significance were used (the 2nd column of Table 1). They express the significance - weight of the particular criteria. The coefficient of significance is calculated as the rate of average value of importance of a given criterion and average value of the importance of all the criteria:

$$ci_i = \frac{\overline{EIC_i}}{\overline{EIC}} \quad (4)$$

These coefficients show how particular criteria differ from the average value of the importance of all criteria. If the value of criteria is less than 1.00, it means that their significance in the set is less than the average value.

In order to reflect the significance of each criteria in the evaluation of the company performance, the values from 3rd column should be multiplied by the coeficient of the particular criteria significance. The final values of *the company performance in each criterion with regards to its significance* (their weight in the set of criteria) are indicated in the 4th column of the table.

$$\overline{CCP_{i(ci)}} = \overline{CCP_i} \cdot ci \quad (5)$$

The data in the 4th column can be used for the calculation of average value of the company performance. This value presents the *customer satisfaction index* and is calculated as following:

$$CSI = \frac{\sum_{i}^{m} \overline{CCP_{i(ci)}}}{m} \quad (6)$$

The average value 6.3 (214.2/34) is indicated in the last row of the 4th column of the table. This value is usually expressed in percentage, which in this case is 63%. It implies that 37% is missing to full satisfaction of the customers. The elimination of these 37% should become a goal of the company.

6. CONCLUSION

Evaluation of customers satisfaction cannot only determine the CSI but can also help to reveal the reserves in the company operations. Based on the information from the research the enterprise can find out what is done well and what needs to be improved. What is done well should be developed more and the rest should become a challenge for further improvement. The company should focus on these criteria which were evaluated by customers with lower amount of points and attributed high priority.

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ABSTRAKT

HODNOTENIE SPOKOJNOSTI ZÁKAZNÍKA V PODNIKOCH MESTSKEJ HROMADNEJ DOPRAVY

Tento článok sa zaoberá spokojnosťou zákazníkov podnikov mestskej hromadnej dopravy. Článok zdôrazňuje dôležitosť a úlohu výskumu, vysvetľuje prípravnú fázu výskumu a venuje zvláštnu pozornosť zostaveniu dotazníka. Článok popisuje realizáciu výskumu, informuje o výskumných a kontaktných metódach, výbere respondentov a nástrojoch, ktoré boli pri výskume použité. Výsledky výskumu sú prezentované v tabuľke, ktorá poskytuje informácie o zákazníkových prioritách a hodnotení podnikového výkonu. V závere článku je popísaná metodika a stanovenie indexu spokojnosti zákazníka.

KĽÚČOVÉ SLOVÁ

kritériá kvality, prepravné služby, marketingový výskum spokojnosti zákazníka, index spokojnosti zákazníka

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