Total management of customer service value - a tool for sustainable changes in service behavior: Ukrainian experience in suburban passenger traffic

Olexander Bakalinsky[1 \[0000-0003-1215-7470\]], **Victoria Ilchenko**[2 \[0000-0003-4318-0999\]],
Valentyna Khmylievska[3\[0000-0003-0010-905X\]], **Svitlana Petrovska**[4 \[0000-0003-3561-5729\]]

[1] National Transport University, Kyiv, Ukraine, anticrisiscrew@gmail.com
[2] National Transport University, Kyiv, Ukraine, nika-ivg@ukr.net
[3] National Aviation University, Kyiv, Ukraine, v.vertel@gmail.com
[4] National Transport University, Kyiv, Ukraine, petrovskayas@ukr.net

Abstract. Services, where clients are served simultaneously in one space, require new approaches for customer service value management. Total customer service value management is a new management concept in the service industry. On the example of suburban passenger transportation, the authors try to prove that it can be an effective tool for customer and transport behavior management. Encouraging drivers of private cars to increase the frequency of public transport usage can reduce harmful emissions, reduce cost of the development of car infrastructure, reduce drivers' and passengers' transport fatigue and increase traffic safety. The implementation of purely economic measures aimed at private car owners' (residents of the suburbs) transport behavior change, can have the effect of increasing the share of those who use public transport. However, this effect may be temporary, as people will gradually return to usage of private cars if they are not satisfied with the value and content of transport customer service value offered by the suburban passenger carrier. Therefore, in order to increase the sustainability of such switching effect, local and state authorities should encourage the suburban carrier to regulate the customer service value of transportation service provided by it, in a certain way. In this way there is a problem of measuring human attitudes to the transportation service offered by the carrier, and developing on this basis the optimal management influence (budget of changes, project implementation time, the magnitude of the effect of switching drivers of private cars to use public transport, combination of these optimization criteria). The largest suburban traffic flow to the capital of Ukraine, Kyiv, is generated by the satellite town Brovary, so the transport situation here is tense. The marketing research results of the possibilities of private cars drivers switching to the use of public transport in this connection are presented.

Keywords: Service, Customer value, Total management, Segmentation by direction of customer value search, Suburban passenger transportation, Carrier company, Transport behavior, Customer behavior, Marketing research.

1 Introduction

Total management of customer service value (CSV) is a new management concept in the service industry [1]. It is based on understanding the formation of the CSV as a difference (subtraction) between the benefits and sacrifices of the client. The special segmentation procedure is based on the directions where client search the CSV. The determining of effect of changes in service and customer behavior measures as probability. According to the authors, it can be an effective tool for managing the flow of passengers, which we are trying to prove in this research.

Encouraging drivers of private cars to increase the frequency of public transport usage has several beneficial effects – reducing harmful emissions, reducing the cost of building car infrastructure, reducing transport fatigue of passengers and drivers and improving traffic safety.

The implementation of purely economic measures aimed at private car owners' (residents of the suburbs) transport behavior change, can have the effect of increasing the share of those who use public transport. However, this effect may be temporary, as people will gradually return to usage of private cars if they are not satisfied with the value and content of transport customer service value offered by the suburban passenger carrier. Therefore, in order to increase the sustainability of such switching effect, local and state authorities should encourage the suburban carrier to regulate the customer service value of transportation service provided by it, in a certain way.

In this way there is a problem of measuring human attitudes to the transportation service offered by the carrier, and developing on this basis the optimal management influence (budget of changes, project implementation time, the magnitude of the effect of switching drivers of private cars to use public transport, combination of these optimization criteria).

2 Literature review

The customer service value is a concept that is widely used in the service industry [2]. However, the routine of usage and wide dissemination of this term does not mean that the concentration of understanding of its essence by practitioners and scholars is sufficient to perform the functions of a sustainable economic category. By "category" in a broad sense, we mean the basic classes of being and, accordingly, the main classes of the concept of being, their properties and the relationship between them.

In work [3] it is shown that 65 publications on the subject of CSV were published by 1940, by 1990 their number doubled every ten years. During the period 1990-2000, the number of articles increased 6 times, and in 2000-2010 – 3,5 times. Today, the formation of an exclusive for the client CSV is a new potential source of competitive advantage [4]. In fact, CSV is the main idea of the company's existence in modern conditions [5].

In the history of this term we find the following most expressive definitions:
- what was given by the client for the benefits (Zeitaml, 1988 [6]);
- perceived monetary costs for a set of economic, technical and social benefits – the result of the exchange with the firm (Anderson, Jain, Chintagunta, 1993 [7]);

- the buyer's perception of value, which is presented as the difference between the quality or benefits of the product and the sacrifices that consist of paying the price (Monroe, 1990 [8]);

- consumer value as quality perceived by the market which correlates with the price of your product (Gale, 1994 [9]).

The area of consensus in these definitions is that: the CSV reproduces not only the properties of the service, but also the situation of its providing; the CSV has a dual nature (value for the organization – value for the client); in the service area the CSV is a difference between what can be called benefits and sacrifices of the client.

Instead, the area of disagreement is the diversity of views on the components of the CSV, and, accordingly, their definitions (quality, benefits, sacrifices, satisfaction, intention, purpose). Obviously, without defining these components, it is impossible to determine the CSV as a whole, so let's do it below.

Benefits are understood as an increase in the current level of client well-being as a result of service, and its reduction is considered as *sacrifice*. *Well-being* should be understood not only materially, but also morally, psychologically, culturally, socially, etc. [1]. *Satisfaction* – the encourage of pleasant emotions from the process and results of service. By *intentions* we mean the direction of the client's consciousness flow, which was the result of service (in context of repurchase of service). *Purpose* is a specific variant of consumer choice, which is formed on the basis of intentions, as a result of previous experience of using the service, and situational factors.

The client will not always want only an increase of benefits, he may seek: only a reduction of sacrifices; only the growth of benefits; balanced both growth and reduction of sacrifices and benefits. In general, the client may be interested not only in winning, but also in reducing the probable loss.

We see the logic of the client's consumer behavior that is repeated: the difference between perceived sacrifices and benefits as a result of the service turns into the CSV, occurs the satisfaction with service, and on its basis – the intention to repurchase, which in the future is the foundation of consumer purpose.

Customer retention by the service organization is achieved precisely through the repetition of their service and consumer behavior. Repeatability of service and consumer behavior of the client is provided by a unique profile of the service's value. However, it is obvious that the interaction with the service provider is not able to create the most favorable unique CSV for each of the clients. This is especially evident in the services, where clients are served simultaneously in one space. Thus, in the passengers' transportation there is a managerial task to find a profile of the CSV , which will be a compromise between the CSV, which each of the passengers want to get as a result of interaction with the carrier. A successful searching by the carrier company for the parameters of such a compromise CSV of transportation service provides the achievement of its market and, as a consequence, economic goals.

Today, 54% of the world's population lives in urban areas near cities, and by 2050 this share will increase to 66% [10]. In the European Union, the share of the population of such agglomerations is already 75%, they produce 85% of gross national product [10]. Without public transport, these areas are difficult to reach, their development is not sustainable, and their population does not have equal opportunities with residents of city.

Various restrictions, economic destimulation to commuter trips by private cars and improvement of suburban transport CSV are designed to increase the frequency of public transport usage. It should help to reduce harmful emissions, save cost on the development of car infrastructure, reduce transport fatigue of road users, increase its safety [11]. But automobilization of the population, poor management of infrastructure and public transport in Ukraine have led to the fact that the flow of people from the city limits to the capital has become a problem of national importance. The capital city of Kyiv has 2.85 million registered people – the eighth most populous country in Europe. In fact, it is home to 10% of the country's population – 3.7 million. The metropolitan area of Kyiv has 5.2 million residents. In 2020, Kyiv ranked 12th in the world and third in Europe in terms of congestion. According to the forecast, in 2025 Kyiv residents and suburban residents will spend twice as much time traveling as in 2020.

The largest generator of suburban flow to Kyiv is the satellite town of Brovary. People traveling to Kyiv from Brovary choose the combined "bus - metro" and "private car - metro" trips or use only private cars throughout the trip.

According to the capital city officials, the situation can be improved by various restrictions on the entry of cars into the city, as well as an increase in parking fees in the city. However, according to the authors, in suburban traffic such measures are only the part of the management of transport human behavior. People will not want to give up the benefits of traveling by car, because a significant part of the trip "suburbs – downtown" lies at road, where traffic is not obstructed in the form of congestion. In cases where the car still gets into a traffic jam (for example, at the entrance to the city), there will be public transport next to it (there are no separate lanes for public transport on suburban and intercity roads). During such stop, the comfort in the car will always prevail over the conditions of stay in the cabin of public transport. That is, in terms of the *result* of the trip (duration of travel, time flexibility to start the trip, the ability to choose the route), in suburban traffic, the driver of a private car wins more compared to public transport than when traveling to the city. The *process* of moving in suburban traffic flow (for example, indicators of comfort), as mentioned above, will almost always be better perceived by a person when traveling by car. The exception may be greater traffic fatigue as consequence of the need to drive a car in difficult road conditions. Therefore, an important factor in changing the transport behavior of a suburban resident – the owner of a private car – in addition to increasing of his travel costs should be to improve the conditions of passengers' transportation in group modes of movement in space, in other words, change their CSV.

3 Research methodology

The problem [12] that faced by managers of suburban carriers and local authorities during the intensive automobilization of the population, is to find parameters to influence to the transport behavior of commuters in such way that the share of passenger traffic moving by public transport increases. The problem that needs research [12] is a part of the managerial and can be formulated as absence of information about the content and dimentions of elements of "suburb – city" trip CSV that

motivated (and should motivate) of transport behaviour of private car owners in context of increasing of public transport using. Our marketing research is designed to solve it.

The spatial boundaries of the marketing research determine the traffic flow on the route Brovary – Kyiv. The time limits for the study of transport behavior of passengers and drivers are limited to weekdays. Only those people who use both public transport and a private car to travel to the city became the respondents in the survey. The meaningful boundaries of the study of transport behavior were various motives that motivate a person to choose one of the two ways to trip to the city – a private car or public transport.

The logic of marketing research was as follows. Initially, the authors tried to find an answer to the research question of the value of increasing of the suburban trip cost, which can motivate a person to abandon usage of a car and switch to public transport, the results can be found in [13]. Afterwards, the content and value of the CSV of suburban trips by both car and public transport were measured. This made it possible to identify problems with transport services; compare CSV of trips in different ways (private car and public transport); find motivations that should lead to the desired change in transport behavior. On the basis of such measurements, a segmentation procedure was carried out. That shows which groups (segment or segments) of travelers should be in focus for the managerial influence for managers of suburban carriers and local authorities; what motivations drive the transport behavior of people – representatives of the segments; how strong the motivation for change should need. Segmentation was carried out according to the desired directions of human search for CSV of suburban trips. The procedure of such segmentation is proposed in [1].

The expanded content of CSV suburban trips (for private car and public transport) was formed before studies and based on the article [14]. The criteria for excluding CSV elements from the extended list was to check the homogeneity test [15]. It was performed by calculating the Cronbach's alpha coefficient [16]. In our research the homogeneity of the test questions regarding the trip by private car was characterized by the value of the Cronbach's alpha coefficient - 0.73, and travel in suburban public transport - 0.81.

Respondents' perception of elements that form benefits, sacrifices, and the CSV of suburban trip in two ways – by car and by public transport – were measured in surveys using the classical Likert scale [17]. As the number of questions on the Likert scale regarding travelling by car and public transport are differed, the normalization procedure was followed. This made it possible to compare the benefits, sacrifices and the CSV of travel by private car and public transport.

The probability of the switching of the owner of a private car to the use of public transport in suburban trip was estimated by the modified semantic differential scale [12, p. 382]. The distribution of respondents according to their opinions of the probability of increasing the share of their usage of public transport shows the current situation and allows the researcher and manager to understand how significant the share of those who can be influenced by forming of the CSV of suburban trips. The strength of the correlation between the probability of switching and the normalized CSV of trips in different ways allows to determine the priority areas of management influence on the CSV.

The research results can rationalize the searching for areas and parameters of management influence, according to which it will be optimal for one or more criteria from the list: budget of changes, project implementation time, the magnitude of the effect of switching private car drivers to use public transport.

4 Results

The results of surveys of respondents' perception of the elements (attributes) of the CSV of suburban travel by car and public transport are shown in table 1 and 2.

Table 1. Perception of attributes of customer value of a suburban trip by public transport

Attributes of benefits	Average values on the array, points on the Likert scale	Attributes of sacrifices	Average values on the array, points on the Likert scale
Clarity and readability of the schedule	2,3	The long walking part of the trip	3,7
Convenience of the schedule	1,9	Time loss due to congestion	4,7
Convenience of a waiting place (bus stop)	0,5	Failure to land due to a full cabin	4,1
Convenience of purchasing tickets	2,1	Feeling of timelessness	3,7
Willingness of staff to help	3,9	Total direct cash costs for the trip	2,7
Clean interior of the vehicle	3,1	Inconvenient seats for passengers in the cabin	3,5
Opportunity to do their own thing on the road (use a smartphone, read)	3,9	Crowding in the cabin	4,3
Low risk of health loss due to an accident	4,3	Physical fatigue from the trip	4,1
Customer value - the average value on the array, points on the Likert scale			**-8,8**

Table 2. Perception of attributes of customer value of a suburban trip by private car

Attributes of benefits	Average values on the array, points on the Likert scale	Attributes of sacrifices	Average values on the array, points on the Likert scale
A short distance to the car parking place from home	4,6	Loss of time due to congestion	4,8
Driving pleasure	3,5	Feeling of timelessness	4,1
Comfort in the car	4,4	Total direct travel expenses (fuel and parking)	3,9
Spare private space	4,8	Physical fatigue (chronic diseases) from driving car	4,1
Ability to listen to music without restrictions	3,9	The need to focus on the rules of the road	3,8
Ability to communicate by voice telephone without restrictions	3,2	Threat of property loss due to an accident	3,5
Availability of parking in the city	1,9	Risk of health loss due to an accident	3,4
Customer value - the average value on the array, points on the Likert scale			**-1,3**

It follows from Tables 1 and 2 that both ways of trip (by public transport and private car) in the connection Brovary – Kyiv, generate a negative average CSV. Therefore, the transport situation on this route is unsatisfactory.

In order to compare the sacrifices, benefits and CSV of trips by public transport and private car, their values were normalized to the maximum and put to table. 3.

Table 3. Normalized values of benefits, sacrifices and customer value of suburban travel by public transport and private car

The way of trip in suburban connection	Normalized average value of benefits on the array, points on the Likert scale	Normalized average value of sacrifices in the array, points on the Likert scale	Normalized average value of the customer value of the trip on the array, points on the Likert scale
Public transport	0,55	0,77	-0,22
Private car	0,75	0,79	-0,04
Difference in perceived customer value of suburban travel by car and public transport			**0,18**

From the normalized values in table 3 it is shown that the number of sacrifices when traveling by car and public transport in suburban connection is almost the same (0,77 and 0,79), while the car gives much more benefits (0,75 vs. 0,55 in public transport).

The probability of increasing the frequency of use of public transport by respondents was estimated by the semantic differential, as shown in Fig. 1.
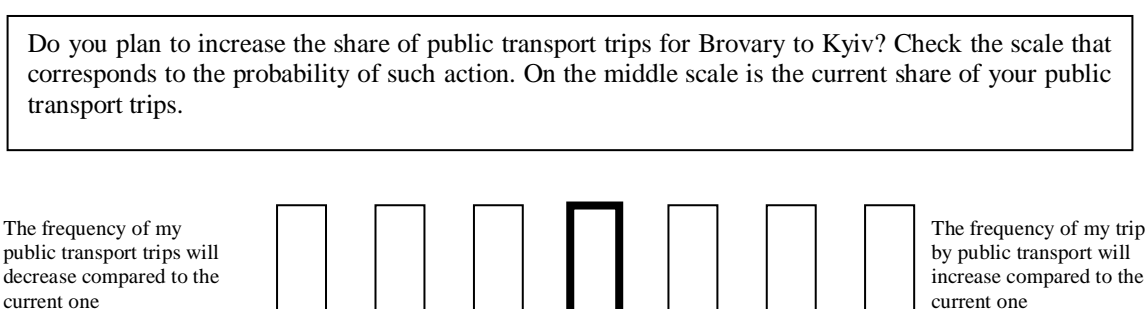
Do you plan to increase the share of public transport trips for Brovary to Kyiv? Check the scale that corresponds to the probability of such action. On the middle scale is the current share of your public transport trips.

The frequency of my public transport trips will decrease compared to the current one ☐ ☐ ☐ ▢ ☐ ☐ ☐ The frequency of my trips by public transport will increase compared to the current one

Fig. 1. The scale for assessing the probability of increasing the frequency of using public transport by respondents

As the research was conducted in the form of an interview, the interviewer clearly showed the respondent a card with a semantic differential scale and asked to determine the reaction with a mark in the appropriate box of the scale. The distribution of the probability of swiching of drivers of private cars to the use of public transport in suburban trips for their current CSV is presented in Fig. 2.

As can be seen from this distribution, only 23% of respondents plan to increase the frequency of travel from Brovary to Kyiv by public transport, 63% - to reduce, and 14% - do not seek any changes.
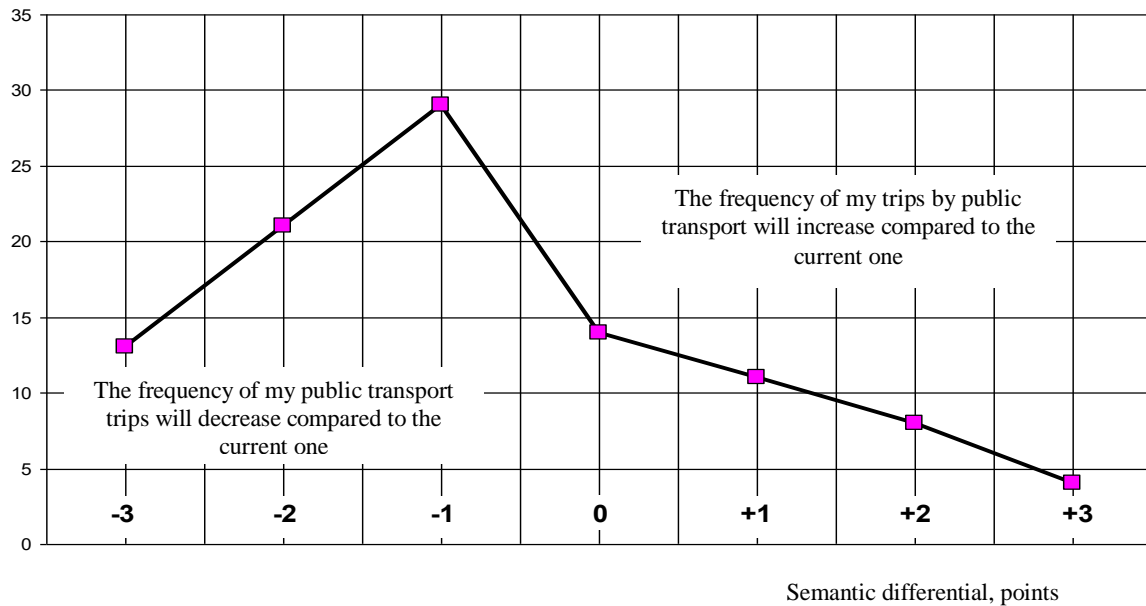
Share, %

Semantic differential, points

The frequency of my trips by public transport will increase compared to the current one

The frequency of my public transport trips will decrease compared to the current one

Fig. 2. Distribution of probability of transition of drivers of private cars to use of public transport in suburban trips

When predicting human transport behavior, the most important answer is the research question: "What is the relationship between the subtraction between the normalized CSV travel by car and the normalized CSV travel by public transport with the probability of increasing the frequency of public transport using?". It was obtained by the following procedure:

1) Values of the CSV of trips by car and public transport, corresponding to the attitude of each respondent, are normalized;

2) The subtraction between these values is calculated (as a distance);

3) The coefficient of linear correlation between such subtraction and probability of increase in frequency of use of public transport on all array of respondents is defined;

4) The obtained value of the correlation coefficient was estimated according to the ordinal scale of Chaddock [18]: 0,1–0,3 – weak; 0,3–0,5 – moderate; 0,5–0,7 – noticeable; 0,7–0,9 – strong; 0,9–,99 – very strong. It was strong – 0.73.

As a segmentation criteria, we chose the direction of human search for the value and content of the CSV of trip in a certain way – a private car or public transport [1]. Any other base of segmentation will not provide such completeness of managerial information. In the table 4 the processed survey data on segmentation is presented.

Table 4. Shares of segments of commuters based on the direction of their search
for the CSV of a trip by private car and public transport, %

Sizes of sacrifices and benefits	The method of movement in suburban traffic	
	Private car	Public transport
S+, B+	37	9
S–, B+	31	52
S–, B–	23	34
S+, B–	9	5

Note. The person search: "S +" – to increase sacrifices; "B +" – to increase benefits;
"S-" – to reduce sacrifices; "B-" – to reduce benefits

It is obvious that the change of the CSV in the direction when the sacrifices increase (S +) and the benefits decrease (B–) is undesirable for the client (see Table 4). However, the researcher must take into account the share of respondents who perceive the attributes of the CSV in this way. Let's explain why this happens.

Attributes of sacrifices and benefits have the ability to change their affiliation in different service situations. For example, through the broken window of the bus in the cabin it is formed a draft. One person perceives it negatively because of the possibility of a cold, and another rejoices because of a pleasant cooling. In addition, human psychological mindsets can also increase the difference between the modules of the sums of assessments of the attributes of sacrifices and benefits. Therefore, such a combination can still occur in the processing of survey data and is a natural feature of its design. However, according to the authors, better the researcher determines the content of sacrifices and benefits that make up the CSV of a particular service in a clearly defined service situation, the lower the share of such "paradoxical" results is likely to be.

Let's define three most important attributes of benefits and sacrifices of suburban trips. From the table 1 it follows that the biggest sacrifices of a person using public transport are the loss of time due to congestion along with the feeling of

timelessness, crowding in the cabin and refusal to board due to a full cabin (inability to provide service due to lack of service productivity). The biggest benefits of public transport, respondents believe the willingness of staff to help, the ability to do their own thing on the road (not to waste of time) and the cleanliness of vehicles. Instead, people need convenient waiting places for transport, a convenient schedule and improvements in the purchase of tickets to travel. The combination of the average values of the attributes of the benefits and the sacrifices obtained by us leads to the fact that the CSV of transport trips is negative (-8.8).

In the table. 2 we see that three most important sacrifices of private cars' drivers are the loss of time due to congestion, the feeling of timelessness and physical fatigue from driving. The biggest benefits they consider the preservation of private space, the convenience of the trip when leaving the house due to the short distance to the parking, the comfort in its cabin. The difference in the sum of the average benefits and sacrifices of drivers also makes the CSV of car trips negative (-1.3), but it is much better than that of public transport.

Cross-analysis of data in table 1 and 2 shows that a person on suburban trips is most concerned about the risk of wasting time due to congestion and maintaining a certain level of privacy.

The differences between the normalized values of the sacrifices and the benefits of suburban travel in different ways explain why the CSV of travel by public transport is much lower compared to car travel. With such differences, it will be extremely difficult to encourage a private car owner to use public transport on a suburban connection: a person has to make a choice between bad and very bad.

The characteristic of the difference between the perceived CSV of suburban trips by car and public transport is calculated as the distance between them and shows how differently the respondent perceives the CSV ways of moving in the suburban connection. In our case, it can be assessed as significant, which further confirms the previous conclusion.

It is also worth noting we found that among those who plan to reduce the share of travel by public transport, a large share a relatively low probability of such events. This can be partly explained by the fact that people want to change to personal transport but are unable to do so: limited solvency for buying a car; lack of bicycle infrastructure, impossibility to park individual transport (eg. electric scooter) at the metro station, etc.

From the value of the coefficient of linear correlation between the subtration of CSV by car and public transport and the probability of increasing the frequency of using public transport for the whole array of respondents (0,73) it follows that the choice of commuter travel is significantly influenced by human perception of comfort in the car and public transport, as well as the constant availability of alternatives to travel by private car. This conclusion is generalized, it generally characterizes the transport behavior of all segments from pendulum suburban flow. Therefore, the task of further research in this context is the establishment of asosiation between the probability of switching to public transport of different segments of people depending on the: attributes of sacrifices and the benefits of trip; the frequency of car using; income; social status; areas of employment; personality etc.

As can be seen from table. 4, 37% of drivers are satisfied with trips' CSV in full. If the number of car sacrifices was reduced, another 31% could potentially join the satisfied. About 68% of drivers are satisfied with the benefits of car travel. The results of the analysis of the attributes of car trips' CSV show that it is impossible to reduce the attributes of benefits due to their nature. Therefore, increasing the value of sacrifices of drivers should be considered a priority influence on trips by private car.

It is obvious that such managerial influence can be provided by decisions of local and (or) state authorities. And the suburban carrier will have a very limited influence on them, for example, by lobbying its own interests in government or local level. But the implementation of such measures will lead to an increase in those wishing to use public transport, that will affect the carrier's CSV. So how should the carrier react when forming the CSV of transport services? We will show it further.

From the second column of table. 4 it follows that only one in ten will be satisfied with the CSV of public transport (9%), which is four times less than for car travel. About 61% of respondents are satisfied with the benefits of traveling by public transport, and 86% are not satisfied with the sacrifices. Therefore, the logical direction of the carrier's management efforts should be the priority reduction of passenger sacrifices, and only after that - increase their benefits.

From the analysis of data from table. 4 it follows that the priority in terms of the magnitude and starting of the expected effect, which will be to reduce the frequency of use of a private car in suburban trips, are segments of people who perceive trips' CSV by private car as S+ B+ and S− B+, and by public transport as S+ B+ and S− B−. The total share of such segments will be 68% and 61%, respectively.

However, it remains unclear which attributes of the CSV of suburban trip by public transport are subject to priority of improvement in our selected segment. So fig. 3 shows the structure of the respondents' perception of attributes of the CSV of the suburban trip by public transport, which estimated as "negative perception" or "rather negative perception" and, as a result, need priority improvements in the target segment. Here, the attributes of the CSV should no longer be divided into the sacrifices and benefits of a person traveling in suburban public transport.

Comparing the perception of the attributes of the CSV with the whole array of respondents (see above, the analysis of the data in Table 1 and 2) with the perception of the target segment (see Fig. 2), we see that they differ. Therefore, the conclusions that could be made by the managers of the suburbun carrier without our procedure of segmentation, but only according to table 1 and 2 would be wrong. Moreover, only such an approach to segmentation provides complete information on changes in the elements of the SC, which will give the largest, fastest, cheapest effects or a combination thereof. In addition, the managers of the carrier must take into account in which place of the service process are the attributes (elements) of the CSV, which are perceived by passengers negatively and keep in mind the possibility of changing elements at those points in the service process where critical events occur; a accumulated clients' impression goes to negative level; client feels a lack of information about the conditions of service providing [22].
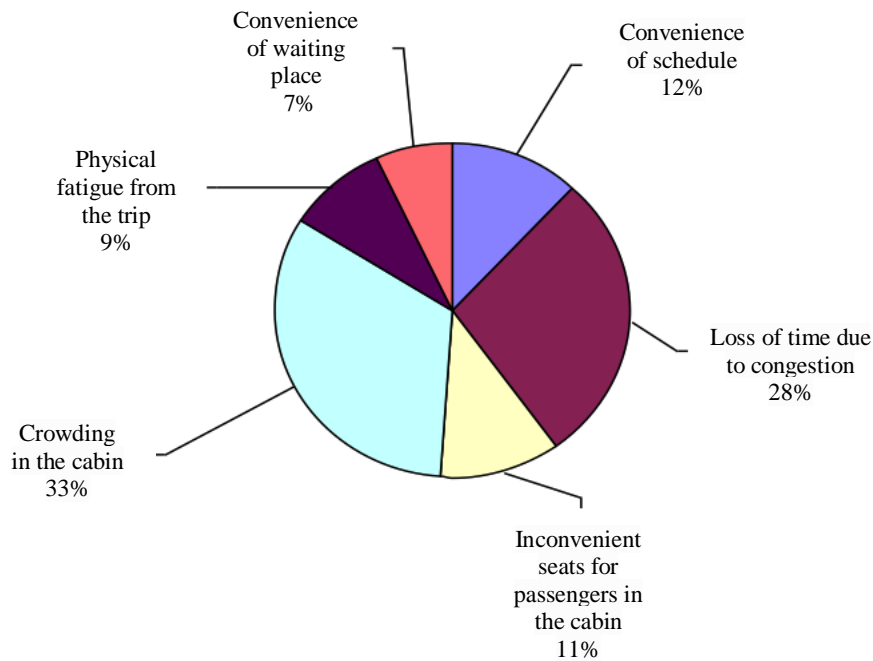
Fig. 3. The structure of the perception of respondents from the target segment of the attributes of suburban travel's CSV by public transport, who received ratings of "negative perception" or "rather negative perception"

5 Conclusion

The abovementioned allowed us to draw the following conclusions.

1. Overcoming car-centrism in the development of road transport infrastructure, reducing damage to environmen, increasing transport safety are possible mainly due to changes in transport behavior of a person who prefers public transport rather than a private car. It is the value and content of suburban trips' CSV by public transport, and not only monetary costs and time, become special factors of human transport behavior.

2. People will choose a way of moving in space that will potentially give the desired combinations of the highest CSV and (or) the lowest sacrifices and (or) the highest benefits. The view that the passenger always try to achieve the highest CSV of the transportation service is erroneous. In other words people will choose the desired combinations of elements of CSV.

3. The similarity of transport behavior of representatives of one segment in this study was ensured by choosing the right basis for segmentation – the direction in which a person expects to receive the sacrifices, benefits and CSV of a suburban trip.

4. The highest sacrifices of a person who uses public transport are the loss of time due to congestion along with the feeling of timelessness, crowding in the cabin and refusal to board due to a crowded cabin. The highest benefits of public transport respondents believe the willingness of staff to help, the ability to do their own things on the road and the cleanliness of the interiors of vehicles. Instead, people need convenient waiting places for transport, a convenient schedule and improvements in the purchase of travel tickets. The CSV of transport trips is negative (-8,8).

5. The three highest sacrifices of private car drivers are the loss of time due to congestion, the feeling of timelessness and physical fatigue from driving. The highest benefits they consider the preservation of private space, the convenience of the trip when leaving the house due to the small distance to the car parking, the comfort in its cabin. The CSV of travel by car is negative (-1,3), but it is much better than by public transport.

6. From the normalized values of trips' of sacrifices when traveling by car and public transport in suburban connection is almost the same (0,77 and 0,79), while the car gives much more benefits (0,75 vs. 0,55 in public transport). So, it will be extremely difficult to encourage a private car owner to use suburban public transport.

7. The distribution of the probability of switching of private car drivers to the use of public transport in suburban trips at their current CSV shows that only 23% of respondents plan to increase the frequency of travel from Brovary to Kiev by public transport, 63% - reduce, and 14% - do not want any changes.

8. The priority of the carrier's management efforts should be the reduction of passenger sacrifices, and only then – increase in benefits.

References

1. Bakalinsky, O. V.: Total management of the customer service value. DUIT, Kyiv (2017).
2. Lovelock, C., Wirtz, J.: Services marketing: people, technology, strategy. 8th edn. Hackensack, N.J. (2016).
3. Bakalinsky, O., Ilchenko, V., Zarbalizade, E.: The modern approaches to definition of customer service value. Prychornomorsʹki ekonomichni studiyi 54, 68-74 (2020).
4. Woodruff, R. B.: Customer value: The next source for competitive advantage. Journal of the Academy of Marketing CSVience 25, 139–153 (1997).

5. Slater, S. F.: Developing a customer value-based theory of the firm. Journal of the Academy of Marketing CSVience 25, 162–167 (1997).

6. Zeithaml, Valarie A.: Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence. Journal of Marketing 52 (3), 2–22 (1998).

7. Anderson, James C., Dipak, C. Jain, Pradeep, K. Chintagunta: Customer Value Assessment in Business Markets: A State-of-Practice Study. Journal of Business to Business Marketing 1, 3–29 (1993).

8. Monroe, Kent B.: Pricing: Making Profitable Decisions. McGraw-Hill, New York (1990).

9. Gale, Bradley T.: Managing Customer Value. Free Press, New York (1994).

10. Botzoris, G., Galanis, A., Profillidis, V., Eliou, N.: Commuters Perspective on Urban Public Transport System Service Quality. WSEAS Transactions on Environment and Developmen 11, 182–192 (2015).

11. Vuchic, Vukan R.: Transportation for Livable Cities. 1st edn. Routledge (1999).

12. Churchill, G. A.: Marketing Research Methodological Foundation. 5th Edition. Dryden Press, New York 1(991).

13. Bakalinsky, O., Ilchenko, V., Zarbalizade, E., Zaplitna, T.: Monetary Factors of Suburbs Residents' Transport Behavior Change: Experience of Ukraine. International Conference on Sustainable Innovation in Mechanical Engineering, ICSIME-2K21. Faculty of Engineering & Technology, Rama University Uttar Pradesh, Kanpur, India (2021).

14. Bakalinsky, O.: Determinants of consumer value of passenger transportation. Visnyk ekonomiky transportu i promyslovosti 44, 34–38 (2013).

15. Duke, V.A .: Computer psychodiagnostics. Bratstvo, St. Petersburg (1994).

16. Cronbach, L.J.: Coefficient alpha and the internal structure of tests. Psychometrika 16 (3), 297–334 (1951).

17. Likert, R.: A Technique for the Measurement of Attitudes. Archives of Psychology 140, 1–55 (1932).

18. Eliseeva, I.I., Yuzbashev, M.M .: General theory of statistics. Finance and statistics, MoCSVow (1995).

19. Bakalinsky, O., Lozhachevska, O., Ilchenko, V., Kovalenko, N.: Analysis of Trajectory of Client's Attitude Formation in Managerial Decisions for Improving the Customer Service Value. In: Alareeni B., Hamdan A., Elgedawy I. (eds) The Importance of New Technologies and Entrepreneurship in Business Development: In The Context of Economic Diversity in Developing Countries. ICBT 2020. Lecture Notes in Networks and Systems, vol. 194, pp. 1947-1957. Springer, Cham (2021).