

**Krzysztof Grzelec**

dr hab.

Politechnika Gdańska; Zarząd Komunikacji Miejskiej w Gdyni

k.grzelec@zkmgdynia.pl

DOI: 10.35117/A\_ENG\_16\_01\_01

**Selected elements of the logistic customer service in public transport – Gdynia case**

**Abstract:** Relationship marketing involves negotiated service promise, which is characterized by: the reliability of trip in the desired direction, using of suitable means of transport at a certain price, expected conditions of trip in right time. The universality of the principles of customer service determined the adoption of marketing orientation by the Public Transport Authority in Gdynia. It's made by marketing research and forming of public transport services based on its results. PTA in Gdynia planning services, takes into account not only the needs of existing customers (passengers), but also the needs of people using private cars. This makes possible to increase quality of PT services. The rule: "right the first time" is the main determinant of Public Transport Authority in Gdynia.

**Keywords:** Customer service; Urban transport; Marketing research; Transport demands

**Introduction**

- Customer service is the most important place among the logistical issues. Its importance stems from:
- changes in international markets (globalization of markets and production, and thus the introduction of international standards of service);
- necessity of verify the accepted principles of customer service with practice and changing their requirements;
- the need to maintain high efficiency of logistics services as part of a chain of activities, leading consequently always full of consumer satisfaction.

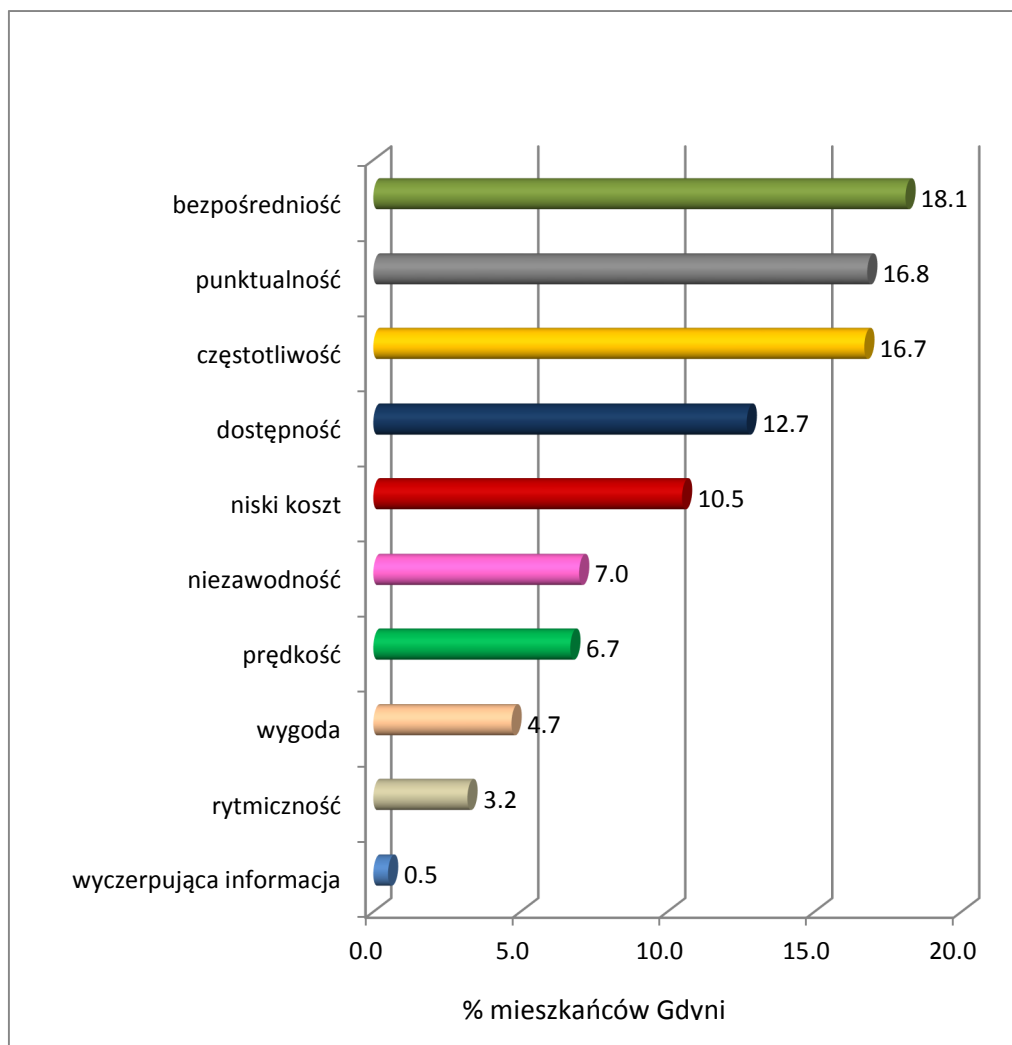
Customer service is a concept that creates a logistical 6R principle: the right amount, the right condition, right time, right place, the right cost and the right customer. Customer service, also called the logistics of the customer is a skill, the ability to meet the requirements and expectations of customers, regarding to time and place of delivery, using all available forms of logistics activity, including transport and information. Relationship marketing, which is a pillar of customer service assumes negotiated the promise of service which the market public transport means assurance of implement transport service for a particular passenger, in a relationship, the means of transport, at a specified price in the expected conditions of carriage and set by the organizer of public transport time.

**Formation of customer service elements based on the ranking of transport postulates**

Application of logistic concept of customer value requires testing the importance of various elements of customer service. In urban transport, they are analyzed in the framework of a comprehensive research preferences and transport behaviour of inhabitants. Such studies should be carried out every 2-5 years by the organizers of urban transport [3].

In order to ensure representativeness, attempt to research should be chosen by random method. In preferences and behaviour of transport studies are used interview and survey methods. The right place to conduct the interview, due to the extensive nature of the measuring instrument - an interview questionnaire is a household.

The scope of study logistic customer service includes identification and prioritization of transport postulate. An example of postulates transport residents of Gdynia is presented in fig. 1. It should be noticed at this point that the ranking of the demands of transport carried out in different cities in Poland it shows that among the most important are those, which are associated with time travel [7].



1 Ranking of transport postulates Gdynia inhabitants in 2013.

Source: Preferences and transport behaviour of inhabitants of Gdynia in 2013. Research report ZKM Gdynia, Gdynia 2014.

In Gdynia four main demands (customer service elements) formed in the order of directness, punctuality, frequency, and availability. Immediacy is a journey without stops. This postulate in Gdynia consistently over the years is classified as the most important. Among the systems transport network designers prevail different views on ensuring inhabitants of required number of direct connections.

Supporters of customizing the system routes the communication lines to the preferences of residents (principles of shaping the communications network of the Management of Urban Transport in Gdynia clearly indicate this kind of procedure), indicate the need for development of transport offer and its individual parameters, which - according to the principles of marketing - as much as possible they will meet the expectations of passengers. Moreover, they indicate differences in shapes of urban areas, e.g. hampering the creation of convenient

transfers in some cities and urban areas because of the band system transport network. It should be also noted that the interchange are indicated by car users as one of the 4 main reasons for choosing a car in the city. The high share of connections with changes may adversely affect the creation of conditions for sustainable development of urban transport, discouraging car users to use public transport and passenger of urban transport to travel by cars. In Poland such changes in behaviour of transport population favours, a lack of consistency in the implementation of priorities in motion for transport, and in some cities, which has its roots in the early 90s of the twentieth century, pro-cars transport policy.

The opponents of the expansion of direct connections in public transport frequently rely on economic and exploitation arguments, indicating that communication with transfer is more likely to enable expected punctuality, they are less prone to congestion and make it possible to provide a higher frequency of running vehicles and generate lower costs for the organizer. It is possible to minimize the inconvenience of transfers through synchronization of timetables, leading to shorten the waiting time for another vehicle and provide the required comfort for passengers waiting at the bus stop or station platform. Because the choice of a particular variant of transport services (indirect or without) is associated with specific costs not only for the transport organizer, but primarily for passengers, it is required to use the concept of value for the customer, analyzing the full range of customer benefits and costs to be borne in order to obtain those benefits [2]. Passenger costs will create: a necessity of leaving the vehicle (air-conditioned - cooled or heated), the possibility of deterioration of travelling in another vehicle (e.g. the loss of a seat), subjective increase of uncertainty regarding the certainty of service another vehicle, the need to incur additional charges in the absence of tariffs correspondence and the lack of integration between the different organizers offer.

Punctuality determines the confidence of reaching in a predetermined time to the destination. In urban transport punctuality of vehicles depends on:

- traffic conditions;
- system of traffic management, including the priorities for public transport vehicles;
- type and condition of vehicles and infrastructure;
- effectiveness of control the implementation of transport services;
- the number of passengers;
- performance of drivers additional operations (ticket sales, assistance to disabled persons).

The main threat for implementation of a transport service within a given time is the deterioration of traffic conditions. ZKM Gdynia periodically examines time between stops, adjusting schedules to changes in traffic and having a good time on the so-called stops countervailing end stops that allow to start another course in time, in case of previous course delay. It is implemented as an intelligent traffic management system (ITS) - TRISTAR. ITS launch is usually associated with the introduction or extension of priorities in traffic for public transport (bus lanes, priority for public transport vehicles at the entrance to the intersection, locks ensure the priority when you turn on the traffic). An example of improvement of communication speed buses, increasing the attractiveness of public transport travel, while the deterioration of traffic conditions for passenger cars by introducing bus lanes, is presented in table 1.

**Table 1.** The benefits of separation lanes for buses - an example from Warsaw

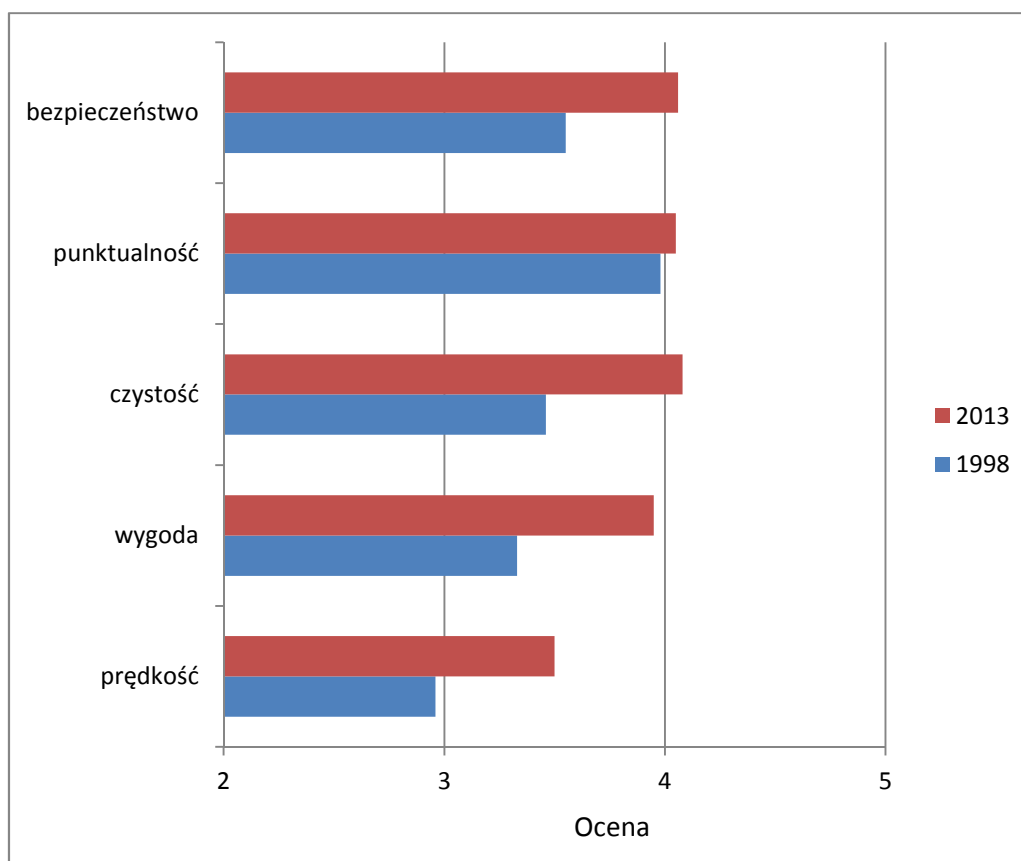
Średnie czasy przejazdów przed i po wydzieleniu pasów dla autobusów [min]				
Kierunek	Przed wprowadzeniem wydzielonych pasów dla autobusów		Po wprowadzeniu wydzielonych pasów dla autobusów	
	samochody osobowe	autobusy	samochody osobowe	autobusy
Średni czas przejazdu odcinka Trasy Łazienkowskiej – kierunek Praga	12,0	23,0	14,5	17,1
Średni czas przejazdu odcinka Trasy Łazienkowskiej – kierunek Ochota	7,0	23,2	8,8	16,8

Source: S. Sarna: *Wpływ wydzielonych pasów autobusowych na Trasie Łazienkowskiej na ruch pojazdów*. Transport Miejski i Regionalny nr 7-8/2010, s. 33.

It is worth mentioning that the knowledge of the mechanisms of disruption of buses, including the impact of the admission movement of other vehicles, especially bicycles, on the efficiency of the dedicated bus lanes, should be taken into account in their planning [1]. In Gdynia, with the introduction of ITS it was first isolated stretch of bus lane in Kielce street, which is a combination of nearly 20 thousandth Witomino district with the downtown. In 2015 it launched two more bus lanes, in the street Morska linking Gdynia with northern cities of the metropolis: Rumia, Reda and Wejherowo.

The punctuality, rather reliability, where punctuality is a component determines the technical condition of vehicles and infrastructure (roads, railways, catenary, power supply equipment - substations, etc.). Entering into service of new vehicles with better traction properties (e.g. higher performance acceleration, greater efficiency climbing) and modernization of infrastructure, a positive influence on the performance of services under the parameters timetable. Also, the type of used vehicle (length, number of doors, low floor, retractable platform for the disabled) decide punctuality, affecting the waiting time at bus stops and efficiency of boarding and disembarking, in particular persons with disabilities. Consistently implemented policies play determines the rolling stock, so improve punctuality.

In Gdynia, thanks to modernization of the transport fleet trolley and catenary ,manages to significantly improve not only the operating parameters recorded by the operator and organizer, but - what is more important - speed and punctuality in the assessment of the passengers - fig. 2. Quality control services is one of the most important tasks of the transport organizer. Control efficiency decides about the quality delivered to the customer. It should be noticed that the quality delivered may differ from the quality perceived by passengers, which becomes the object of study, called qualitative shortcomings [9]. City Transport in Gdynia has an extensive system of inspection services. Before starting the project TRISTAR, enabling control traffic in real time, control was achieved by fixed checkpoints and mobile - vehicle traffic inspectors This provided a comprehensive supervision, regulation and control of the movement of buses and trolley buses, and minimizing deviations realization of transport offer, both in terms of quantity and quality.



2. Evaluation of the characteristics of communication trolleybus in assessing the inhabitants of Gdynia in 1998 and 2013. (scale: 2 - insufficient to 5 - very good)

Source: Preferences and transport behaviour of inhabitants of Gdynia in 2013. Research report ZKM Gdynia, Gdynia 2014.

Number of passengers affects punctuality above all by the time it takes passengers to leave the vehicle and entry of new passengers. In this respect, particular importance acquire conducted regularly survey the number of passengers to adjust schedules to changes in demand. Underrated aspect connected to the number of passengers travelling conditions, is waiting on the bus stop. Stops in central areas, especially during rush hours are characterized by congestion, which often discourages transfers, difficult entry and exit of vehicles and deteriorating security conditions It is necessary to consider the possibility of extending and expanding the platforms.

Appropriate for urban type of ticket distribution is intensive distribution. This means using different distribution channels, including the sale of tickets in vehicles. Modern technological solutions allow you to conduct the sale of vehicles of public transport through dedicated machines. This allows the driver not to engage in the sale, which shortens the waiting time of vehicles at the bus stop. In ZKM Gdynia tickets are sold in vehicles (selling through the drivers tickets only four or five segments ) Such way of selling on one hand provides the expected passengers ticket availability, on the other hand limits their buying in the vehicle to a situation in which a passenger could not, with specific reasons to buy the ticket at another point of sale. Ticket sales by drivers is to counteract the dissemination of the principles of buying tickets in vehicles, which adversely affects the punctuality of public transport Changes in technology sales from vending machines and encouraging the experience of other cities prompted ZKM Gdynia to start work on the introduction of ticketing vehicles through these devices

The stop time is extended when the driver provides support for people with disabilities at the entrance or exit from the vehicle. Depending on the applied technical solutions in vehi-

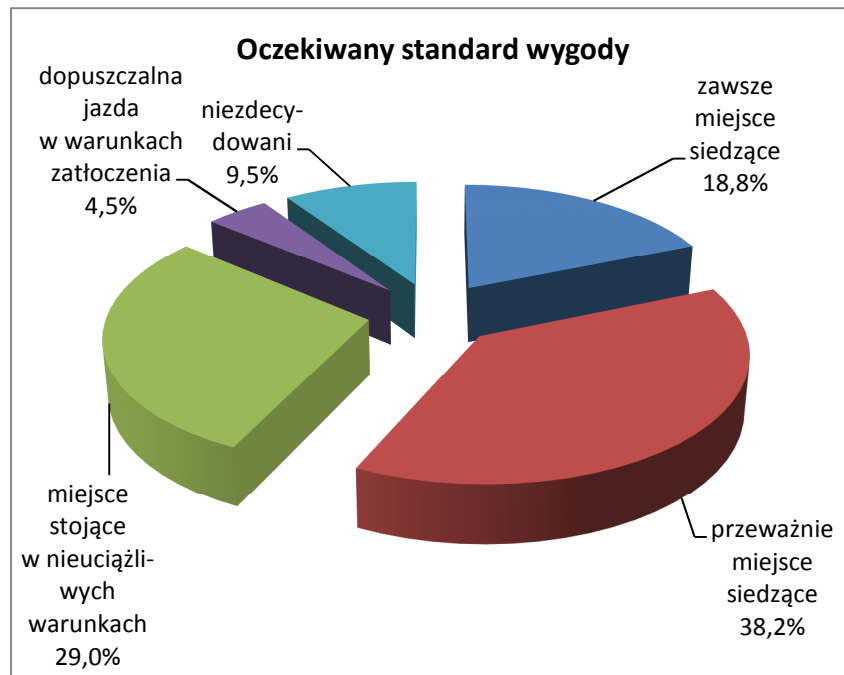
cles, the time associated with the handling of passengers with disabilities can include the time needed for: lowering and raising of the vehicle "called kneeling "eject (manually or controlled from the drivers desktop) ramps for passengers in wheelchairs, enter or exit a passenger with a disability requiring special care. The problem with attendance of disabled for ZKM in Gdynia has operational, marketing, social, and often political issue. Expectations of passengers sometimes are contradictory in this regard and are - as examples - the reason why the discussion is on the media forum [11].

The frequency of vehicles is measured by the number of departures on a route or a line in a certain direction In studies in Gdynia it is characterized by high usability testing alternative choices: direct connections with lower frequencies and connections with transfers higher frequency. The test is a more detailed analysis of alternative taking into account the specific attributes of quality urban transport in Poland taken by M. Wolański [10]. The aim of the research the author is to build a model taking into account alternative choices specific attributes of quality urban transport services The results of the first pilot study, conducted in collaboration with ZKM in Gdynia, including among others, the calculation of utility specific quality attributes willingness to pay for the opportunity to use the service, which will be characterized by them Created models of choice of transport can be a very helpful tool when constructing transport offer and demand modeling using specialized programs.

Accessibility to public transport services is usually analyzed by the distance to the bus stop (the station, railway), public transport and measured by reaching time or distance passenger must overcome. Due to the different conditions associated with terrains shape (hills, crossing through the forest, no separate sidewalks, etc.), In the available studies, it is recommended to use both an acceptable time and distance travel. In planning the communication system, the following distance between stops are adopted [5]:

- for buses, trolleybuses and trams (ordinary): 400-700 m;
- for the tram communication (fast tram): 600-800 m;
- for subway: 1000-1200 m;
- for urban railway: 1500-2000 m.

In some cities in Poland, these distances differ from those described above The actual distance bus are from 170 to 880 m, while the tram from 220 to 880 m [4]. According to an American study reaching a maximum distance to stop is 1750 m, with half of the passengers choose walking within the range 760-900 m. In Sweden, a distance of 800 m is used for planning purposes Gdynia test results indicate that the average time to reach the bus stop of urban transport in Gdynia is about 5 min Its time to come to stop accepts 98% of the inhabitants of Gdynia [7].



### 3 Expected by citizens of Gdynia standard comfort of travel 2013.

Source: Preferences and transport behaviour of inhabitants of Gdynia in 2013. Research report ZKM Gdynia, Gdynia 2014.

One of the main activities in the field of logistics customer service is to keep regular customers. It pointed out the following benefits of ownership of the appropriate share of regular customers [2];

- new customers bring revenue after a certain time, and only when they turn into regular customers (promotion costs);
- satisfied customer returns;
- knowledge of the expectations of loyal customers reduce the cost of development of service offerings;
- constant client is ready for integration with the company, which has a positive effect on reducing costs;
- satisfied customer recommends other services - attracts customers;
- satisfied customer is less price sensitive.

The specificity of public transport in urban areas makes the aim of the transport, in terms of the system, in the first place is not a positive financial result, but the achievement of the assumed market share (the system does not mean that individual undertakings providing transport services do not have to follow their activity criterion of profit. To achieve the target system, the organizers of public transport co-finance the functioning of public funds).

A measure of share is modal split, indicating the participation of the trip (or trips) carried out by public transport in cities and agglomerations. The national conditions, it is assumed that the share of public transport in the implementation of travel in cities and urban areas should not be less than 50%. In the urban transport, share of regular customers of public transport can be calculated on the basis of the number of season tickets, especially taking into account the monthly average number of journeys made on the basis of type of ticket. The share of regular passengers can also be established on the basis of the results of marketing research. The test results of ZKM Gdynia 2013 show that the share of people traveling always or mostly by public transport in Gdynia is 46.6%. Their preferences and expectations should be taken into account in shaping the transport offer in the first place. Research shows a convergence of demands of all

citizens; regular customers of public transport, as well as those traveling always or mostly by car. In all these segments of the four main demands are: directness, punctuality, frequency and availability, and the patrons of public transport appreciate more frequency than availability.

The increase in share of public transport in the implementation of urban travel can be achieved beyond the expectations of loyal customers that transport. Those who are not regular transport customers tend to have higher requirements in terms of travel time. This follows from the reference point of the people who represent them travelling implemented their own car. High role of the criterion of time for residents using the car travels urban confirm the results of earlier studies cited M. Wolański. The fulfillment of the requirements for travel time of people who are not regular customers transport makes it possible to not only attract new customers, but also improves the quality of services offered to regular clients of transport.

An important role in the process of customer value plays identification and analysis of the reasons for the resignation of urban transport services. The most important determinants of resignation from services or take no decision on use of the collective urban transport in Gdynia are in order: greater convenience travelling by car, the shorter travel time by car, no need to wait, no need for changing trains.

Knowing the causes of higher competitive car compared to public transport, ZKM Gdynia consistently affects the growth of a sense of comfort trip. First, comfort travel determine the conditions of service delivery, including the level of capacity utilization. Accepted standards of comfort journey of 4 people per 1 m<sup>2</sup>, are for ZKM in Gdynia starting point for laying timetables. The decision about changing the unit capacity (capacity of the single-stage vehicle on the shaft), organizer from Gdynia often takes basing on marketing research - fig. 3. Reducing differences in the travel time between car and public transport in Gdynia ZKM sees primarily in the implementation of priorities for buses and trolley traffic. It should be noted that the increase in congestion on certain stretches of streets reduces the differences in journey times between road transport collective and individual. The introduction of priority for public transport in these sections can thus significantly improve the competitiveness of public transport in terms of driving time.

In urban transport can also be successfully implemented the concept of logistics service promise. This is justified by the nature of the transport service, including in particular the simultaneity of production and consumption of services, determining the importance of "right the first time." Purchase a ticket by the passenger should be for him synonymous with delivery by the organizer of a transport service that meets the demands of the most important transport. In case of ZKM in Gdynia it will be the service:

- the expected level of immediacy;
- ensuring reaching on time to your destination;
- performed with required frequency;
- available in both spatial and economic issues.

### Summary

The universality of customer service principles allows to use this concept in urban transport. City Transport in Gdynia from the beginning adopted a marketing orientation to the client. This is reflected among others in the implementation of marketing research and shaping the individual elements of the transport offer on the basis of the results of these studies.

When determining the real value of the service for the customer ZKM Gdynia identify and rank the demands of transport, and on the basis of analyzes affects the shape of the individual elements of the marketing mix, i.e. features of the service, price, distribution and promotion.

Important for ZKM Gdynia, not only from a marketing point of view, but also implemented by organizer from Gdynia of the policy of sustainable mobility, it is to identify the main rea-



sons for the resignation or the decision not to use the public transport services. Meeting the demands of transport segment car users can not only reduce the rate of departing passengers to competitive in relation to the transport of passenger cars, but also helps to improve the quality of services offered and, consequently, to maintain regular customers.

Service character of public transport means that the principle of 'good for the first time' is of particular importance for the organizers and operators (carriers) that transport.

Relationship marketing involves the promise of a negotiated service that the market transport means assured implement a transport service for a particular passenger in a relationship, given mean of transport, at a specified price in the expected conditions of carriage and founded by the organizer of public transport time.

The universality of customer service principles makes the Management of Urban Transport in Gdynia from the beginning adopted a marketing orientation to the client. This is reflected among others in the implementation of marketing research and shaping of individual elements of the transport offer on the basis of these findings. ZKM Gdynia shaping transport offer takes into account not only the expectations of current customers (passengers), but also the demands of people using mainly from passenger cars in the implementation of urban travel, which enables continuous improvement of the quality of services provided. The "good for the first time" is the main determinant of urban transport organizer from Gdynia actions.

### Source materials

- [1] Bauer M., Zakłócenia czasu przejazdu autobusów korzystających z wydzielonych pasów ruchu na wlotach skrzyżowań z sygnalizacją świetlną. „Transport Miejski i Regionalny” Nr 20/2013, s. 21-26.
- [2] Christopher M.: Logistyka marketingowa. PWE, Warszawa 2003, s. 55 i 33-36.
- [3] Grzelec K, Wyszomirski O.: Badania marketingowe w komunikacji miejskiej. IGKM. Warszawa 1998, s. 32-33.
- [4] Monitorowanie usług publicznych. Tom II. Analiza porównawcza. Związek Miast Polskich. Poznań 2003, s. 154-158.
- [5] Podoski: Transport w miastach. WKiŁ, Warszawa 1977, s. 143 oraz Gospodarowanie w komunikacji miejskiej. Pod red. O. Wyszomirskiego. WUG, Gdańsk 1998, s. 33.
- [6] Rynek usług transportowych w Polsce. Red. nauk. D. Rucińska. PWE, Warszawa, 2015, s. 135-139.
- [7] Preferencje i zachowania transportowe mieszkańców Gdyni w 2013 r. Raport badań ZKM w Gdyni, Gdynia 2014.
- [8] Sarna S.: Wpływ wydzielonych pasów autobusowych na Trasie Łazienkowskiej na ruch pojazdów. Transport Miejski i Regionalny nr 7-8/2010, s. 33.
- [9] Starowicz W.: Kształtowanie jakości usług przewozowych w miejskim transporcie zbiorowym. Wydawnictwo Naukowe Uniwersytetu Szczecińskiego. Szczecin 2001, s. 22-24.
- [10] Wolański M., Alternatywne metody hierarchizacji postulatów przewozowych oraz wyniki ich zastosowania w polskich miastach. „Transport Miejski i Regionalny” 128/2012, s. 4-9. M. Wolański z zespołem, Metody efektywnego uwzględniania ponad pięciu atrybutów jakościowych w badaniach typu stated choice – II etap. Raport badania nr KZIF/BMN/13/14. Warszawa 2014.
- [11] <http://www.trojmiasto.pl/wiadomosci/Bronie-kierowcow-autobusow-i-trolejbusow-n87966.html>. Dostęp w dniu 25.02.2015.