



Received: 01.03.2019

Received in revised form: 20.03.2019

Accepted: 21.03.2019

Published: 29.03.2019

THE IMPACT OF PRICE PROMOTIONS ON PURCHASE DECISIONS OF YOUNG BUYERS IN RAIL TRANSPORT ON THE EXAMPLE OF POLAND

Wpływ promocji cenowych na decyzje zakupowe młodych kupujących w transporcie kolejowym

Grażyna Rosa (1), Izabela Ostrowska (2), Agnieszka Tomaszewicz (3)

(1) University of Szczecin, Faculty of Management and Economics of Services, Cukrowa 8, 71-004 Szczecin, Poland
e-mail: grazyna.rosa@wzieu.pl

(2) University of Szczecin, Faculty of Management and Economics of Services, Cukrowa 8, 71-004 Szczecin, Poland
e-mail: izabela.ostrowska@wzieu.pl

(3) University of Szczecin, Faculty of Management and Economics of Services, Cukrowa 8, 71-004 Szczecin, Poland
e-mail: agnieszka.tomaszewicz@wzieu.pl (corresponding author)

Citation:

Rosa G., Ostrowska I., Tomaszewicz A., 2019, The impact of price promotions on purchase decisions of young buyers in rail transport on the example of Poland, *Prace Komisji Geografii Komunikacji PTG*, 22(1), 7-12.

Abstract: The article discusses the impact of price promotions on buying decisions of young buyers in rail transport based on secondary and primary research. The study conducted by the research team is of pioneer nature in the transport services market and opens new possibilities for carriers in the scope of analyzing the expectations of service users and adapting to them. The study was conducted using the author's questionnaire on a nationwide sample $n = 353$ (segment "young adults" 18-29 years). This article focuses on the segment of young people in literature included in the group of young adults who, because of continuing education outside their place of residence, taking up a job or for sightseeing reasons, often travel and are considered to be an important target group for railway carriers. The purpose of the article is to show and discuss preferences and behaviors of transport users and to identify their transport needs, with particular emphasis on price promotions. Especially for young people, who largely do not have a regular income, price promotions are an important factor during selection a means of transport. Knowledge about this will allow carriers to create a competitive offer and build lasting relationships with clients.

Key words: rail transport, price promotions, purchase decision

1. Introduction

Marketing activity throughout its history was shaped by the concept of precise reaching the customer. In the middle of last century, the course of the discussion on the then “service revolution” resulted in that the services have been redefined, going beyond the sale of “basic services”. In this wider perspective, the emergence of more separate and autonomous marketing of services in such fields as transport, communication, education and e-commerce was recognized and predicted. Marketing of transport services can be defined as a way of transport companies operating on the market, perceived through the process of rational stimulation and meeting the needs reported by transport users. It requires continuous adjustment of production and service offerings to changing market realities and customer requirements as well as analyzing competitors’ activities (Rosa, 2013).

The issue of passenger transport, including rail transport, is analyzed in the literature by many of authors (e.g. Wyszomirski, 1994; Paprocki, 1996; Bąkowski, Szewczuk, 2000; Bergel, 2005; Taylor, 2007; Engelhardt, 2007; Długosz, 2009; Gorlewski, 2010; Litman, 2011; Buehler, Pucher 2012; Rosa 2013, 2018; Fröidh, Byström 2013; Tolley, Turton, 2014; Banister, Button 2015; White, 2016; Kwarciański, 2017; 2018; Wojtkiewicz, 2017). The activities of carriers such as: introduction of a train ticket common to various railway undertakings, the possibility of purchasing and presenting a ticket in electronic form, competitive prices and attractive price promotions that affect the competitiveness of railway carriers against road transport, especially the individual ones, are of great importance for the popularization of rail travels.

On the basis of the known literature, the following classification of factors shaping the demand structure in relation to the railway can be made (Gorlewski, 2010, p. 15):

- socio-economic factors (price parameters, price of substitute services, income, seasonal factors, travel behavior, other socio-economic factors);
- qualitative factors (frequency of connections in a given relation, travel time, availability of services, scope of additional services, level of service).

However this author doesn’t include the issues of spatial accessibility to the railways and the connection network, which can significantly influence on the structure of demand [this problem is analyzed by T. Litman (2011) and T. Kwarciański (2017)].

Competition in passenger transport mainly includes instruments such as product (time, comfort and safety of travel, physical availability and number of connections and the price). With competitive fares, enhanced transparency in prices, and availability of

comparable products, the demand for products is no longer independent. The demand for a product depends on the prices and choices available at the time of purchase (Amit et al., 2019, p. 2). It should be noted that consumers use a certain reference price. This is the price they consider to be appropriate for a given product or service. If they conclude that the price offered to them is higher than the reference price, then they do not decide to buy (Falkowski, Tyszka, 2009, p. 404). Such a reference price may be manifested by the cost of traveling with another railway carrier, but also transport by other means of transport, i.e. by car, by PKS (coach transport company) or currently, more and more affordable, by plane. The purpose of the article is to describe the preferences and behaviour of transport users and to identify their transport needs, with particular emphasis on price promotions. Knowledge about this will allow carriers to create a competitive offer and build lasting relationships with clients.

2. Rail passenger transport in Poland compared to other European countries

In an attempt to compare the situation on railways in individual countries, the „railway use indicator” was introduced. It is determined as the quotient of the number of passenger train journeys (given in the statistics as the number of passengers) and the number of inhabitants of a given area. The railway use indicator is equal to the ratio of the number of passengers to the number of inhabitants of the country (Wykorzystanie i potencjał kolejowych przewozów pasażerskich w Polsce, 2017). Using this method of calculation, it can be seen that the average European citizen travels by train 19 times a year, the Pole only 8. It can be seen that the use of railways is growing in Western Europe and is decreasing in Central and Eastern Europe. However, how in this context can we explain twice as much use of railway in Hungary than in Poland? The highest rate of railway use indicator in Europe is observed in Switzerland, where there are 70 trips per one inhabitant per year. Analyzing the reasons for such large discrepancies, it should be noted that rail travel in this country is characterized by (Wykorzystanie i potencjał ..., 2017):

- high availability of railways (huge number of trains per day and cyclical timetable of trains),
- reliability,
- travel comfort (comfortable and well-sounded carriages available even in regional traffic),
- high level of connection provided with other means of transport, as well as a wide offer of a joint ticket for all means of transport,

- relatively high costs associated with using the car in the city.

Compared to other European countries, the average number of journeys by rail, per statistical inhabitant in Poland (eight trips) is not high. This proves that there is considerable unused railway potential, despite the observed changes in recent years. They are noticeable primarily in the gradual increase in the number of travelers. The number of passengers in Poland in 2015 reached the level of 280.3 million, which was an increase of 4.2% compared to 2014 (269.1 million). Meanwhile, in 2017, railways in Poland carried 303 million passengers, and in 2018 more than 310 million passengers. Even such a significant number of passengers allow us to state that the average Polish citizen only traveled several times over the year (Wykorzystanie i potencjał ..., 2017; Rosa, 2018). Changes in the number of passengers in rail transport in Poland in 2008-2018 are presented in figure 1.

The railway network in Poland is relatively well developed inside and around the agglomeration and is being developed through the modernization and construction of new railway lines and stops. These networks provide the best offers of agglomeration railway in Poland. The average density of standard size railway lines in Poland is 6 km per 100 km² (below the average – in the east of the country, above the

average – in the west, which is mainly due to historical circumstances) (Koleje Pasażerskie w województwach – dynamika zmian, 2017).

On the basis of analysis and research, it can be concluded that the most important factors improving the competitiveness of passenger rail transport include:

- **product (offer) appropriately adapted to the needs of the region, namely:**
 - spatial accessibility to rails and connection network,
 - modern carriages equipped with amenities for travelers,
 - proper timetable design (adjusted departure times, timetable periodicity and frequency of running trains),
 - an appropriate level of service,
 - offer of a joint ticket for all means of transport
 - attractive and competitive price.
- **infrastructure and location of stops** in a way that allows them to be used by the largest possible flows of travelers, as well as to adapt them to the needs of people with disabilities. In places where it is difficult to adjust the railway infrastructure, intermodality (e.g. parkings in the *park and drive* formula, city bikes, adjustment of the train layout to city buses or trams) should be promoted.

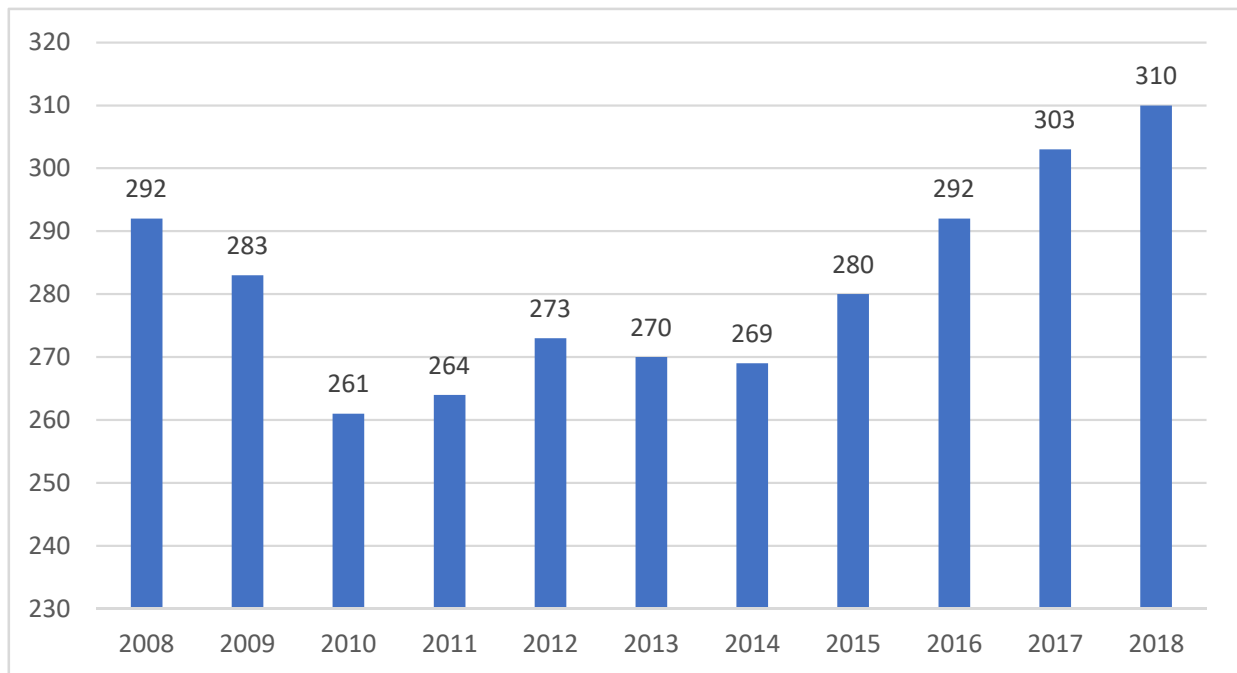


Fig. 1. Number of passengers in rail transport in 2008-2018 (million) in Poland.

Source: Office Rail Transport, <https://www.utk.gov.pl/pl/raporty-i-analazy/analazy-i-monitoring/analazy-i-opracowania/14823,Kolejny-rok-rekordow-na-kolei-podsumowanie-2018-r.html>.

3. Methodology

Our research was carried out from October 2017 to March 2018 on a sample of 353 people from all over Poland, deliberately selected in terms of age, so that they constitute a homogeneous, representative sample of “young adults” aged 18-29. While verification the completed questionnaires, it turned out that 19 of them were incomplete and a sample of 331 people was accepted in the further analysis and inference (error 0.03 and $\alpha = 0.95$). The aim of the research was to select the key features of railway passenger transport services, important for service recipients and obtaining assessments of the implementation of these features by entities providing passenger transport services in Poland. The subject of the research also included the assessment of the content of passenger carriers' websites in the context of pricing policy. Carrier websites have been analyzed in terms of the types of promotions used, having a regional, national and international area of impact. The criterion was defined as, among others, type of promotions used. The research results presented below relate to the analysis of the importance of price and price promotion in making purchase decisions in passenger rail transport.

In order to answer the research questions posed and test the hypotheses put forward, statistical analyzes were performed using the IBM SPSS Statistics version 25. It was used to analyze the basic descriptive statistics, the characteristics of the subjects using frequency analysis and a number of Pearson's χ^2 correlation analyzes, t student for independent samples, one-way analysis of variance, Pearson's r and regression analysis. The classical threshold $\alpha = 0.05$ was considered the level of significance. The results of the test statistic probability at the level of $0.05 < p < 0.1$ were interpreted as significant at the level of statistical tendency. In the first step, basic descriptive statistics were calculated along with the Shapiro-Wilk test examining the normality of the distribution of all measured variables on the quantitative scale. The result indicated that the distributions significantly differed from the Gaussian curve. However, the skewness of all variables did not exceed the range of $-2 < Sk. < 2$, by which it could be considered that the variables have distributions close to normal.

Price is a marketing instrument appearing in connection with other instruments – service, distribution and promotion. Prices are the direct, perceived costs of using a good. Transport prices can include monetary (money) costs, plus travel time, discomfort and risk. Price changes can affect trip frequency, route, mode, destination, scheduling, vehicle type, parking location, type of service selected, and location decisions (Litman, 2019, p. 58). The basic pricing

methods refer to costs (fixed and variable, dependent and independent of production volume, profitability and profit achieved), demand (in reference to its size and flexibility), competition (in relation to the prices of competitors within a given branch). On the other hand, price promotions mainly include: rebates, discounts and reductions, periods and methods of payment and are treated as price decisions, occurring within the pricing strategy applied, related to specific travel days, hours, number of people, etc. (Mindur, Rosa, 2014, p. 591). The pricing elements in the study include:

- ticket price,
- price promotions,
- refund guarantees.

4. Results

The ticket price was the most important element of travel expense for the respondents ($M = 1.4$). However, the assessment of the importance of the price varied depending on the gender. Women were more interested in the cost of tickets ($M = 1.29$) than men ($M = 1.52$). Price promotions were on the second position ($M = 1.54$). While women were more inclined to the opinion of the high importance of price promotions ($M = 1.38$), men considered promotions usually as important but not as priorities ($M = 1.73$). The least important of the price category was the guarantee of reimbursement for delays in rail transport ($M = 1.78$). After all, it was still considered an important aspect in rail transport. In this question, the opinions of men ($M = 1.8$) and women ($M = 1.76$) were the most similar.

To determine the significance of price promotions in passenger rail transport, correlation analysis χ^2 was used to verify the gender correlation with the assessment of the importance of price promotions in rail transport. It turned out that there is hardly any difference between men and women [$\chi^2(3) = 18,04$; $p = 0,001$; $V = 0,25$]. The percentage differences between the sexes are included in table 1.

Tab. 1 The importance of price promotions in passenger rail transport.

	Women (%)	Men (%)	Total (%)
Very important	66.9	49.6	58.7
Important	29.1	31.9	30.4
Less important	2.6	14.1	8
Completely unimportant	1.3	4.4	2.8

Source: own study based on the results of the survey (n=331).

Most of the respondents considered that price promotions as very important (58.7%). More than half of women said that promotions are important. A smaller percentage of “very important” responses was noted among men (49.6%) who, more than women, were inclined to respond in a balanced manner (Fig. 2).

families with children (“Family Ticket”, “Big Family – big discounts”) or seniors (“Ticket for Senior”). Due to the differentiation of prices of transport services, the carrier can effectively influence the demand for services also not to lowering the price for all groups of travelers, which positively translates into the company’s revenues.

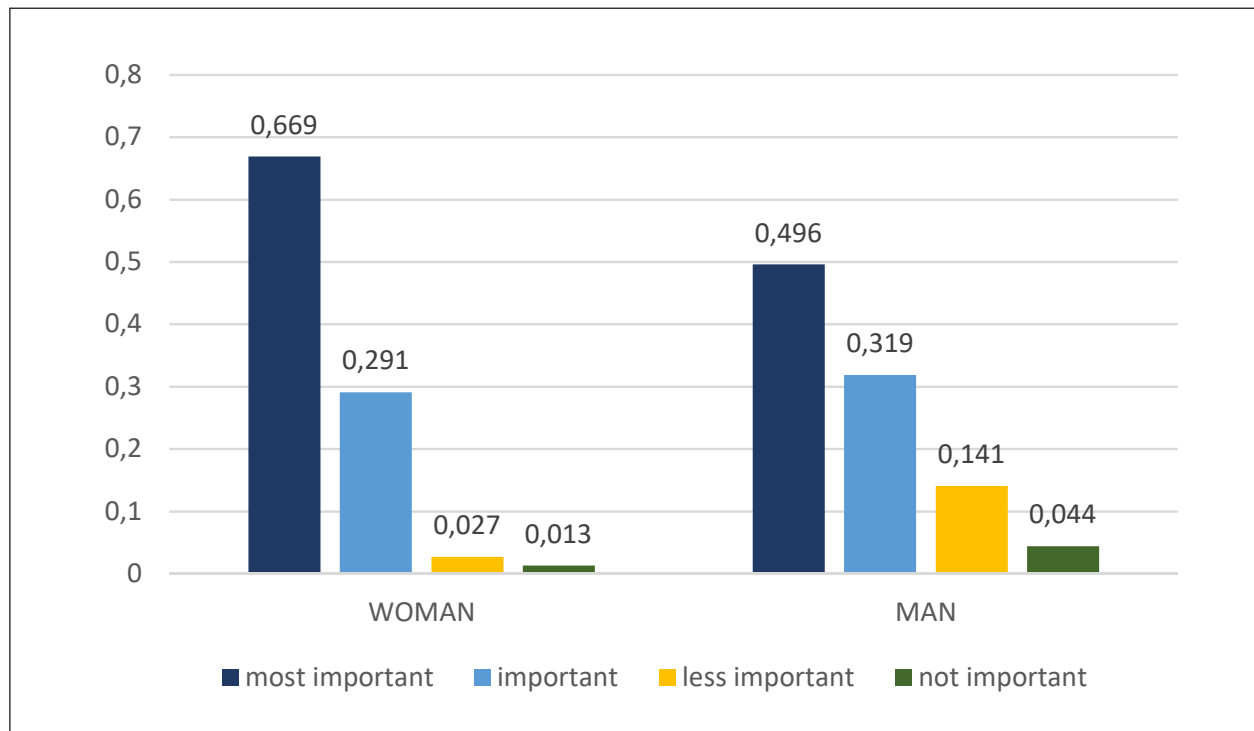


Fig. 2. The importance of price promotions in passenger rail transport by gender.

Source: own study based on the results of the survey (n = 331).

A very important factor in the marketing approach to prices also includes their differentiation. Differentiation in the prices of transport services consists in offering by service providers the same services to different types of buyers at different prices. The basic criteria for price differentiation of transport services can include (Mindur, Rosa, 2014, p. 593):

- A. type of route, line or connection (relation),
- B. the space where services are provided,
- C. time of service provision and their quality characteristics (eg travel comfort, scope of additional services),
- D. size of one-time sale of services, contract,
- E. type of cargo,
- F. distance of transport,
- G. payment for services.

Rail carriers due to price promotions addressed to various market segments may attract the most desirable target groups to their offer. Hence the price promotions addressed to students (“Student Travel”),

P. Waniowski (2016, p. 268-272) draws attention to the fact that not only the amount of the discount is important, but also how the price rebates will be presented to potential buyers. This has a direct impact on the sales volume and, consequently, also on the profits of a given company. In passenger transport, especially in rail, air and bus transport, it is much easier than in transporting freight to get information about price levels, price discounts, to observe many price promotions, treated as price decisions, occurring within the pricing strategy applied, related to specific days travel, hours, number of people, etc. They are communicated to travelers in the form of information on the Internet, at stations, airports, in various types of advertisements. For example, the PKP Intercity SA website there includes information covering both ticket prices, promotions and price bargains.

5. Conclusions

Increasing competition on the market and higher and higher consumer requirements mean that they also expect comfortable and functional trains, adequate point infrastructure (stations, stops), integrated transfer nodes and an appropriate level of service. Railway is a system in which every element is important and can affect the final choice of means of transport by passengers. The innovative activities of carriers such as the introduction of a one train ticket connecting various railway companies, the possibility of purchasing and presenting a ticket in electronic form are of great importance for the popularization of rail travel. As shown by the surveys conducted on young adults (18-29 years), rail passengers expect a timetable that is tailored to their needs (convenient times) and a competitive price. These factors have the greatest impact on the increase of competitiveness each of railway carriers.

Acknowledgements

This article has been prepared under project financed within the framework of the program of the Minister of Science and Higher Education under the name "Regional Excellence Initiative" in the years 2019-2022; project number 001/RID/2018/19; the amount of financing PLN 10,684,000.00.

References

- Amit R. K., Balaiyan K., Malik A. K., Luo X., Agarwal A., 2019, Joint forecasting for airline pricing and revenue management, *Journal of Revenue and Pricing Management*, 1-18.
- Banister D., Button K., 2015, *Transport, the environment and sustainable development*, Routledge, London and New York.
- Bąkowski W., Szewczuk A., 2000, *Strategie konkurowania na rynku transportowym*, Ogólnopolska Konferencja Naukowa „EKTRA 2000”, Fundacja na rzecz Uniwersytetu Szczecińskiego, Szczecin.
- Bergel I., 2005, Analiza i ocena konkurencyjności międzynarodowych i międzyregionalnych przewoźników pasażerskich, [in:] W. Paprocki, J. Pieriegud (eds.), *Wpływ procesów demonopolizacji i konsolidacji w transporcie na sprawność i efektywność jego funkcjonowania*, SGH, Warszawa.
- Buehler R., Pucher J., 2012, Demand for public transport in Germany and the USA: an analysis of rider characteristics, *Transport Reviews*, 32(5).
- Długosz J., 2009, Systemy transportowe, transport intermodalny, [in:] D. Kisperska-Moroń, S. Krzyżaniak (eds.), *Logistyka*, „Biblioteka Logistyka”, Instytut Logistyki i Magazynowania, Poznań.
- Engelhardt J., 2007, Transport kolejowy [in:] B. Liberadzki, L. Mindur (eds.), *Uwarunkowania rozwoju systemu transportowego Polski*, Wydawnictwo Instytutu Technologii Eksploatacji – PIB, Warszawa – Radom.
- Falkowski A., Tyszka T., 2009, *Psychologia zachowań konsumenckich*, GWP.
- Fröidh O., Byström C., 2013, Competition on the tracks – Passengers' response to deregulation of interregional rail services, *Transportation Research Part A*, 56.
- Gorlewski B., 2010, Czynniki kształtowania popytu na przewozy pasażerskie kolejami dużych prędkości – aspekt teoretyczny, *TTS Technika Transportu Szynowego*, 16(9).
- Kwarciański T., 2017, Teoretyczne aspekty analizy i pomiaru dostępności transportu publicznego, *Problemy Transportu i Logistyki*, 3(39).
- Kwarciański T., 2018, Wpływ rozwoju infrastruktury transportu na dostępność transportową obszarów wiejskich w Polsce, *Problemy Transportu i Logistyki*, 3(43).
- Litman T., 2011, *Evaluating Accessibility for Transportation Planning*. Toronto:Victoria, Transport Policy Institute.
- Litman T., 2019, Understanding Transport Demands and Elasticities. How Price and Other Factors Affect Travel Behavior, Victoria Transport Policy Institute.
- Mindur L., Rosa G., 2014, Marketing usług transportowych, [in:] L. Mindur (eds.), *Technologie transportowe*, Instytut Technologii Eksploatacji – PIB, Radom.
- Office Rail Transport, <https://www.utk.gov.pl/pl/raporty-i-analizy/analizy-i-monitoring/analizy-i-opracowania/14823,Kolejny-rok-rekordow-na-kolei-podsumowanie-2018-r.html> [21.03.2019]
- Paprocki W., 1996, *Marketing usług kolejowych*, Kolejowa Oficyna Wydawnicza, Warszawa.
- Rosa G., 2013, *Konkurencja na rynku usług transportowych*, C. H. Beck, Warszawa.
- Rosa G., 2018, The concept and assessment of the implementation of an integrated rail ticket on the passenger transport market, *European Journal of Service Management*, 3 27(2).
- Taylor Z., 2007, *Rozwój i regres sieci kolejowej w Polsce*, IGiPz PAN, Warszawa.
- Tolley R. S., Turton, B. J., 2014, *Transport systems policy and planning a geographical approach*, New York–London: Routledge Taylor & Francis Group.
- Wykorzystanie i potencjał kolejowych przewoźników pasażerskich w Polsce*, 2017, Office of Rail Transport (Urząd Transportu Kolejowego), Warszawa.
- Koleje pasażerskie w województwach – dynamika zmian*, 2017, Warszawa.
- Waniowski P., 2016, Strategia cenowa przedsiębiorstwa PKP Intercity na tle innych przewoźników kolejowych w Europie, *Marketing i Zarządzanie*, 3(44), 267-278.
- White P. R., 2016, *Public Transport. Its Planning, Management and Operation*, London.
- Wojtkiewicz S., 2017, Funkcjonowanie regionalnego transportu kolejowego w województwie zachodniopomorskim w latach 2005-2015, *Prace Komisji Geografii Komunikacji PTG*, 20(1), 62-77.
- Wyszomirski O., 1994, *Rynek przewoźników pasażerskich*, Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk.