

ATTRIBUTES OF THE COMMERCIAL OFFER OF THE PETROL STATION NETWORK ADDRESSED TO HOUSEHOLDS IN THE PODKARPACKIE VOIVODESHIP

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Purpose: The main objective of the article is to present the results of research aimed at indicating the attributes of the commercial offer of the petrol station network addressed to households residing in the Podkarpackie Province. The essence of the research problem comes down to providing an answer to the question regarding the fundamental factors characterizing the commercial offer of the petrol station network addressed to individual customers. Detailed questions refer to indicating the entity structure of the retail market of petrol station network in the studied region. In addition, its geographical, subject and process structure. The structure of the article consists of the following parts, i.e. determining the current state of knowledge in the scope of the discussed issues, describing the research method, presenting the measurement results and their interpretation, and presenting the final conclusions. The research method used is a critical review of the subject literature and quantitative methods.

Design/methodology/approach: The research procedure will run through the following stages: 1) determining the current state of knowledge in the scope of the discussed issues; 2) description of the research method; 3) measurement and interpretation of the obtained results; 5) final conclusions. The applied research method is a critical review of the subject literature and quantitative methods. For the purposes of the conducted research, the following criteria were indicated for the characteristics of the commercial offer of the petrol station network, i.e. economic-financial, organizational-technical and safety.

Findings: It should be emphasized that the research results presented in the article are preliminary in nature. They constitute one of the stages of scientific research, i.e. *Attributes and determinants of the commercial offer of the petrol station network aimed at households in the Podkarpackie Province*. The aim of this research is to indicate the scope and form of cooperation between the retail supplier of liquid fuels and individual customers whose place of residence is the Podkarpackie Province. It is implemented by: determining the attributes of the commercial offer of the petrol station network addressed to households in the Podkarpackie Voivodeship, indicating the determinants of the choice of the transport fuel supplier by households residing in the Podkarpackie Voivodeship, and determining to what extent the commercial offer of the petrol station network addressed to individual customers in the Podkarpackie Voivodeship reflects the actual needs of the market.

Originality/value: This publication is practical. The adopted main topic and goal of the research is a response to the identified needs reported by individual clients in relation to the current state of knowledge, achievements and experience of the researcher. Actions taken to

achieve progress in scientific knowledge in the discipline of management science and quality in the area of trade systems, their organization and management.

Keywords: supplier, liquid fuels, road transport, customers.

Category of the paper: Research paper.

1. Introduction

Its main objective the article will be to present the results of research aimed at indicating the attributes of the commercial offer of the petrol station network aimed at households in the Podkarpackie Province. Structure of its implementation will be carried out through: 1) determining the current state of knowledge in the scope of the discussed issues; 2) description of the research method; 3) measurement and interpretation of the obtained results; 5) final conclusions. The applied research method is a critical review of the subject literature and quantitative methods. For the purposes of the conducted research, the following criteria were indicated for the characteristics of the commercial offer of the petrol station network, i.e. economic-financial, organizational-technical and safety.

The research results presented in the article are preliminary in nature. They constitute one of the stages of the research topic, i.e. *Attributes and determinants of the commercial offer of the petrol station network aimed at households in the Podkarpackie Province*. The aim of this research is to indicate the scope and form of cooperation between the retail supplier of liquid fuels and individual customers whose place of residence is the Podkarpackie Province. It is to be implemented through: 1) determining the attributes of the commercial offer of the petrol station network addressed to households in the Podkarpackie Voivodeship; 2) indicating the determinants of the choice of the transport fuel supplier by households residing in the Podkarpackie Voivodeship; 3) determining to what extent the commercial offer of the petrol station network addressed to individual customers in the Podkarpackie Voivodeship reflects the actual needs of the market.

The adopted main topic and objective of the research is a response to the identified needs reported by individual clients in relation to the current state of knowledge, achievements and experience of the researcher.

In Poland, in recent years, there has been an increase in the share of transport fuel purchase costs in the structure of household expenditure. This was related to the persistently high prices of petroleum fuels. In the Podkarpackie province, the average number of people in a household was 2.98 in 2021 (2.55 in the country). This region has a low standard of living for its residents. In 2021, GDP there was 3.8% of the national level. GDP per person amounted to 69.4% of the national level. The Podkarpackie Province was characterized by one of the lowest average gross wages per person in the country (87.3% compared to the average in Poland). Disposable income per person in a household reached 82.6% of the national level. Average monthly expenses per

person were at 76.4%. In the structure of household expenses, 9.4% was transport (9.4% in the country), while expenses incurred for the use of a flat or house and the purchase of energy carriers were 17.4% (18.9%) (Statistics, 2022). In 2023, the number of passenger cars in the analysed province was at the level of 1.3 million, which was 655 cars per 1000 inhabitants (723 in the country) (Statistics, 2024a).

The retail market for liquid fuels in the Podkarpackie province was strongly competitive from domestic and foreign companies. In the past period, the petrol station market was changing towards a shopping and service centre model. At the stations, one could not only refuel a vehicle, but also do basic shopping, relax during the journey, use financial services, eat a meal or perform simple maintenance and repair activities (Polish, 2024).

The conducted analysis of the subject literature indicates a lack of comprehensive and detailed studies relating to the structure of the surveyed enterprises and the characteristics of the processes implemented there. The literature review was conducted based on electronic databases, i.e. Scholar.Google.com, Scopus.com, Academica.edu.pl and in the traditional form - library resources. It should be emphasized that the available scientific works most often present determinants shaping the demand for services offered by petrol stations (Zielińska, 2018; Domasiewicz et al., 2023; Zawadzki, 2015) or a study of mobility at petrol stations (Norman, 2006). They present forms of fuel station management (Zawadzki et al., 2017) and issues of spatial distribution and location conditions (Roj-Rojewski et al., 2018; Aslani et al., 2011; Tuzmen et al., 2011; Zhu et al., 2024). In addition, the literature presents trends and expectations in the field of fuel distribution or the direction of transformation in road transport in the use of alternative power sources (Kamiński et al., 2021; Bayram et al., 2022; Domasiewicz et al., 2023). Many available scientific works emphasize the adverse impact of the operation of petrol stations on the area in which they are located, human health and their long-term consequences (e.g. Terrés et al., 2010; Maksoud et al., 2019; Adedeji et al., 2022).

On the other hand, research on the commercial offer of the petrol station network was conducted by the author of this publication and the final results are presented in the article: *Attributes of the Commercial Offer of the Petrol Station Network Addressed to Micro and Small Road Transport Enterprises in the Podkarpackie Voivodship* (Jedynak, 2023a). Their aim was to indicate the attributes of the commercial offer of the petrol station network to the extent necessary to support the decision-making process aimed at selecting the appropriate supplier of transport fuels for the needs of micro and small road transport enterprises based in the Podkarpackie Voivodship. Based on the research conducted, it was found that the commercial offer of the petrol station network addressed to micro and small road transport enterprises goes far beyond the sale of fuels. It includes facilities for the recipient supporting their process of purchasing and using transport fuels, which aims to add additional value by integrating dispersed activities carried out as part of the transport process service. The essential attributes include: personalization of the offer, limited access to the terms of cooperation, wide scope of the offer, availability of the offer, integration of the transport process, personalization of tasks,

speed of establishing cooperation, dispersion of points and extra-regional significance (Jedynak, 2023a).

2. Theoretical basis

One of the intermediate links in the distribution process is retail trade. According to Armstrong J.G., Kotler Ph., this concept means all activities related to the sale of goods and services directly to final consumers for their own, non-business use (Armstrong et al., 2012). Retail trade is conducted in various forms, i.e. retail stores, sales via the Internet and mail, catalog sales, telemarketing and other means of direct contact. Assuming the criterion of the width and depth of the assortment, the following entities in retail trade are commonly indicated, i.e. specialist stores, department stores, supermarkets, convenience stores, hypermarkets, category killers, retail service providers (Jedynak, 2017). Taking into account the way it is organized in the literature on the subject, we distinguish, among others, company retail chains, voluntary retail chains, cooperatives, franchise organizations. On the other hand, due to the scope of service provided, the following groups are indicated, i.e. self-service stores and full-service stores (Armstrong et al., 2012).

In the literature, the sales process in retail trade is divided into three phases, i.e. pre-transaction, transaction, post-transaction (Christopher, 1996). The pre-transaction phase is preparatory (conceptual and organizational). It consists of collecting and transmitting market information, organizing promotions (both products and the enterprise), preparing commercial offers, establishing commercial contacts or conducting negotiations. A commercial offer means a proposal made by the seller to sell material goods and/or services aimed at concluding a binding purchase and sale agreement (Jedynak, 2023a). According to the Civil Code, a commercial offer is a method of concluding a contract consisting in presenting the terms by the offeror and acceptance by the offeree (Act, 1964). In its content, it contains the terms and methods of carrying out the commercial transaction accepted by the seller. The offer may be presented in various forms and scope. It may be subject to commercial negotiation. It may be submitted both orally and in writing in paper or electronic form. It may be addressed to both an individual person and a larger group. It may be generally available or limited (Jedynak, 2023a). In the literature, the basic attributes of a commercial offer are most often indicated as: fit, availability, transparency and timeliness (Levy et al., 2023).

Among the fuels used in road transport, petroleum products are of primary importance. According to data from the Central Statistical Office, in 2023, in the Podkarpackie Province, the structure of fuel consumption in road transport was dominated by motor gasoline with a result of 46.8% (nationally 53.6%) and diesel oil – 36.8% (32.4%). The share of LPG amounted to 16.0% (13.4%). On the other hand, electric passenger cars and hybrid cars

accounted for 0.12% (0.20%) and 0.18% (0.24%) (Statistics, 2024b). According to the President of the Energy Regulatory Office, retail trade in motor gasoline and LPG intended for spark-ignition engines in the past period was conducted at petrol stations. The sale of diesel oil to end customers was carried out using petrol stations, company stations and through deliveries to container petrol stations belonging to recipients, as well as outside the petrol stations themselves (Energy, 2024).

Petrol stations play an important role in motorization. Zielińska E. defines a petrol station as the technical background of motorization (Zielińska, 2018). Norman notes that many activities performed at petrol stations also take place in street traffic, and thus petrol stations reflect the changes and needs noted in motorization (Norman, 2006). Petrol stations primarily enable the distribution of various types of fuels, without which neither the owner of new or used vehicles would be able to use their own cars, in accordance with their individual transport needs (Zielińska, 2018). They can be publicly available or with limited access (Roj-Rojewski et al., 2018). In her scientific work on mobility at petrol stations, Norman emphasizes that they are a place of transition between the stationary and mobile state (Norman, 2006).

Kamiński A, Jakubiec J., Pusz A. note that currently, fuel station facilities are architectural objects with a complex structure, development and equipment (Kamiński et al., 2021). According to the Regulation of the Minister of Economy of November 21, 2005, a liquid fuel station is a construction object that may include: a building, underground storage tanks for liquid fuels, underground or above-ground tanks for liquefied gas, liquid fuel and liquefied gas meters, technological installations, including devices for storing and loading liquid fuels and liquefied gas, water and sewage and power installations, driveways and roofs, and other service facilities and auxiliary rooms (Regulation, 2005). The structure of the fuel station area will include commercial and service facilities and technical facilities. Within the commercial and service part of a petrol station, three basic zones should be identified, i.e. refueling, vehicle service and passenger service (Zielińska, 2018).

There are many criteria used to describe petrol stations. When adopting the criterion of the stability of the location of infrastructure facilities, portable (container) and permanent (stationary) stations should be indicated (Roj-Rojewski et al., 2018). Due to the breadth and depth of the commercial offer, we distinguish petrol stations, i.e. housing estate, basic and motorway (Roj-Rojewski et al., 2018; Zielińska, 2018). The division of petrol stations in the literature on the subject also takes into account the business organization model, on this basis we distinguish dependent and independent networks, independent operators and store stations (Polish, 2024). When adopting this criterion, Zawadzki T., Suszyńska K. indicates five possible forms of running a petrol station, i.e. running an independent petrol station operating under its own brand, running an association petrol station operating under a common brand, running a franchise petrol station, renting a petrol station facility to a fuel concern and running a petrol station as an agent (Zawadzki et al., 2017). The Polish Organisation of Petroleum Industry and Trade in the available studies in the division of steel fuels takes into account the criterion of

capital origin and entity (Polish, 2024). The Central Statistical Office also uses the geographical criterion in its studies (Statistics, 2024a). It should be added that an important criterion for the characteristics of petrol stations should also be the scope of specialisation of entities providing services, the location of petrol stations in relation to existing infrastructure or its availability (Jedynek, 2023b).

In the Podkarpackie Province, there was strong competition on the retail market for transport fuels from both domestic and foreign companies. Fuel stations operated as dependent or independent chains and as independent operators or stations located at stores (Polish, 2024). The Central Statistical Office reports that in 2021 the total number of fuel stations in the Podkarpackie Province was 448 (5.5% share in the country) (Statistics, 2022). According to the Polish Organization of Petroleum Industry and Trade, in 2023 domestic companies had a 24.4% market share, foreign companies 25.6%, independent chains 18.5%, other independent operators 29.0%, and stores 2.5%. In their entity structure, the highest share was held by PKN Orlen SA 24.4%, BP Polska Sp. z o.o. 7.3%, Shell Polska Sp. 5.8, Anwim S.A. (Moya) 5.7%, Circle K Polska Sp. z o.o. 5.2%, and Mol Polska Sp. z o.o. 5.0% (Polish, 2024).

The basic activity of each petrol station is the sale of transport fuels (Roj-Rojewski et al., 2018). However, currently these entities do not focus their activity only in this area. The Polish Organisation of Petroleum Industry and Trade notes that the petrol station market is changing towards a shopping and service centre model. This meant that at petrol stations you can not only refuel your vehicle, but also do basic shopping, relax during the journey, use financial services, eat a meal or perform simple service and repair activities (Polish, 2024). According to the Polish Organisation of Petroleum Industry and Trade, a significant factor in the observed changes are large road investments, changes in the location of stations, takeovers by both domestic companies and independent chains. Moreover, an important factor of change is the introduced ban on Sunday trading (Polish, 2024). Similarly, Zawadzki T., Suszyńska K. notices that the commercial offer of petrol stations addressed to customers is being expanded to include more and more services that were previously reserved for other commercial entities, such as sending and receiving courier parcels, selling motor insurance or renting cars (Zawadzki et al., 2017). Norman D. emphasizes that at petrol stations we are dealing with a very diverse group of people, taking into account the criteria of age, gender, profession, education, financial status, etc. (Norman, 2006).

It is commonly emphasized in the literature that the range of products and services offered by a petrol station depends mainly on its location, and thus its purpose (Zielińska, 2018; Aslani et al., 2011; Tuzmen et al., 2011). Additionally, the range of the offer depends on the package of products and services available to a given operator. Local competition also has a significant impact (Jedynek, 2022). Domasiewicz M., Anuszkiewicz A. note that the advantage of petrol stations over other commercial facilities is their 24-hour availability, good location and thus access or access on days when other commercial entities are closed due to applicable regulations (Domasiewicz et al., 2023). Based on research, Zawadzki indicates three key factors that Polish

drivers pay special attention to when choosing a petrol station: convenient location, fuel price and the station's affiliation to a given chain - understood in the context of the quality of the fuel sold (Zawadzki, 2015). However, Roj-Rojewski S., Kotarska E. notes that the functioning of petrol stations is influenced by many factors, the most important of which are the offered fuel prices (Roj-Rojewski et al., 2018).

Domasiewicz M., Anuszkiewicz A. note that currently, buying fuel is accompanied by buying food and drinks, using toilets, servicing vehicles or simply resting. Based on the conducted research, they state that customers of stations are not guided by the offer of buying fuel itself, but also by the gastronomic offer. Domasiewicz M., Anuszkiewicz A. in their scientific work indicate that every customer who fills up with fuel uses additional options. They point out that petrol stations must expand their group of customers not only among drivers, but also among fellow passengers who satisfy their consumer needs at petrol stations. Domasiewicz M., Anuszkiewicz A. note that with constant attempts to increase the attractiveness of the offer of petrol stations, the sales of fuel itself are decreasing (Domasiewicz et al., 2023). Zawadzki T., Suszyńska K. state that it is the relatively low margin per liter of fuel sold that is the source of dynamic changes in the offer of petrol stations, both in terms of the range of goods and services offered. Therefore, in terms of personnel management, the emphasis is placed on enforcing the obligation of active sales (cross-selling) in relation to each customer, and store promotions at petrol stations are shaped in the same way as in the case of other types of commercial entities (Zawadzki et al., 2017).

3. Methodology

The stages of the research procedure include: 1) indicating the research topic, its purpose, scope and method; 2) determining and defining the evaluation criteria; 3) selecting a sample for research; 4) measurement; 5) interpretation of the obtained results; 6) final conclusions; 7) dissemination of research results.

Research topic: Attributes of the commercial offer of the petrol station network addressed to households in the Podkarpackie Voivodeship.

Its main objective will be to identify the structure of the fuel station network in the Podkarpackie Province and to indicate the attributes of their commercial offer to the extent necessary to support the decision-making process aimed at selecting the appropriate supplier of transport fuels by households residing in the Podkarpackie Province. The essence of the research problem will be to provide an answer to the question regarding the fundamental factors characterizing the commercial offer addressed to individual customers of petrol stations located in the Podkarpackie Province. Detailed questions will refer to the indication of the entity structure of the retail market of fuel station networks in the Podkarpackie Voivodeship.

In addition, its geographical, subject and process structure. Therefore, the subject of the research is the retail market of transport fuels in the studied region, and the entity is the fuel station networks operating there. The area of research is the attributes of the commercial offer of fuel station networks addressed to households whose place of residence is the Podkarpackie Voivodeship.

In terms of the state of knowledge, taking into account the researcher's achievements and experience, the following research hypothesis was formulated, i.e. the price of fuel at the pump is not a fundamental attribute of the commercial offer addressed to households in the Podkarpackie Voivodeship. The commercial offer goes far beyond the sale of fuels. It contains numerous conveniences for recipients, and thus supports (facilitates) their purchasing process. The size of the benefits obtained is primarily related to the purchasing activity of customers and is associated with loyalty programs.

The research method used is quantitative research. The research technique is a direct interview. The research tool is an interview form. Data will be measured from publicly available sources (electronic databases and cooperation regulations) and through an indirect (telephone) and direct interview with a representative of a given petrol station chain. The geographical scope of the research is the Podkarpackie Province. Purposeful sample selection, according to the criterion of the number of stations and their geographical distribution. It was assumed that the measurement would be carried out in November 2024. Analytical tool is MS Excel. The research will maintain data confidentiality and reliability of its collection.

For the purposes of the research, three areas of the characteristics of the petrol station network were identified, i.e. economic-financial, organizational-technical and safety. The adopted areas were defined using measures. A total of 76 variables describing the commercial offer. The measurement form is included in Table 1-3.

Table 1.

Petrol station network evaluation parameters – Economic and Financial Area

SYMBOL	TESTED PARAMETER Economic and Financial Area		UNIT OF MEASURE		NOTES
A.1.1	average unit price of fuel at selected petrol stations	- Motor Gasoline (Standard)	PLN/dm ³		
A.1.2		- Motor Gasoline (Premium)	PLN/dm ³		
A.1.3		- Diesel Oil (Standard)	PLN/dm ³		
A.1.4		- Diesel Oil (Premium)	PLN/dm ³		
A.1.5		- LPG	PLN/dm ³		
A.2.1	value/quantity discounts for individual customers (fuel offer)	- permanent	yes	no	
A.2.2		- occasional/seasonal	yes	no	
A.3.1	value/quantity discounts for individual customers (non-fuel offer)	- permanent	yes	no	
A.3.2		- occasional/seasonal	yes	no	
A.3.3.	value/quantity discounts on fuel purchases under the Large Family Card program		yes	no	

Source: own study.

Table 2.*Petrol station network evaluation parameters – Organizational and Technical Area*

SYMBOL	TESTED PARAMETER		UNIT OF MEASURE		NOTES
	Organizational and Technical Area				
B.1.1	form of concluding a	- directly from the operator (at the petrol station)	yes	no	
B.1.2	cooperation agreement	- remote	yes	no	
B.2.1	duration of the	- definite	yes	no	
B.2.2	cooperation agreement	- indefinite	yes	no	
B.3	loyalty program		yes	no	
B.4	gift cards		yes	no	
B.5	mobile application		yes	no	
B.6	internet platform		yes	no	
B.7.1	access to the loyalty	- aplikacja mobilna	yes	no	
B.7.2	program	- internet platform	yes	no	
B.8.1	loyalty program	- loyalty points	yes	no	
B.8.2		- dedicated purchase offers for fuels	yes	no	
B.8.3		- dedicated shopping offers for non-fuel products	yes	no	
B.9	possibility of linking a loyalty card with a fuel card		yes	no	
B.10.1	mobile application and its functionality	- electronic loyalty card	yes	no	
B.10.2		- access to transactions	yes	no	
B.10.3		- access to e-invoice	yes	no	
B.10.4		- quick payment at the distributor	yes	no	
B.10.5		- road and parking fees	yes	no	
B.10.6		- navigation and maps	yes	no	
B.10.7		- map location of petrol stations	yes	no	
B.10.8		- internet shop	yes	no	
B.10.9		- electronic loyalty catalogues	yes	no	
B.10.10		- discount offers (coupons)	yes	no	
B.10.11		- others, i.e.	—		
B.11.1	internet platform and its functionality	- access to transactions	yes	no	
B.11.2		- access to e-invoice	yes	no	
B.11.3		- navigation and maps	yes	no	
B.11.4		- map location of petrol stations	yes	no	
B.11.5		- internet shop	yes	no	
B.11.6		- electronic loyalty catalogues	yes	no	
B.11.7		- discount offers (coupons)	yes	no	
B.11.8		- others, i.e.	—		
B.12.1	additional services	- shop	yes	no	
B.12.2		- parking	yes	no	
B.12.3		- food service	yes	no	
B.12.4		- hotel services	yes	no	
B.12.5		- car repair	yes	no	
B.12.6		- car wash	yes	no	
B.12.7		- parcel	yes	no	
B.12.8		- direct service at the distributor	yes	no	
B.12.9		- mobile cashiers	yes	no	
B.12.10		- self-service checkouts	yes	no	
B.12.11		- double-sided refueling (information for customers at the dispenser)	yes	no	
B.12.12		- stacje ładowania pojazdów elektrycznych	yes	no	
B.12.13		- others, i.e.	—		
B.13	number of petrol stations located in the service area		pcs.		

Cont. table 2.

B.14	Geographical index/Demographic index		km ² /pcs. tys. person/ pcs		
B.15	access to infrastructure		h/day		
B.16.1	main location	- city	yes	no	
B.16.2		- motorway and expressway	yes	no	
B.16.3		- national roads	yes	no	
B.16.4		- other road categories	yes	no	
B.17	geographical scope of the commercial offer		–		

Source: own study.

Table 3.*Petrol station network assessment parameters – Safety Area*

SYMBOL	TESTED PARAMETER Safety Area		UNIT OF MEASURE		NOTES
C.1.1	fuel type/types	- Motor Gasoline (Standard)	yes	no	
C.1.2		- Motor Gasoline (Premium)	yes	no	
C.1.3		- Diesel Oil (Standard)	yes	no	
C.1.4		- Diesel Oil (Premium)	yes	no	
C.1.5		- LPG	yes	no	
C.1.6		- Electricity	yes	no	
C.2	qualitative assessment of the operator (according to information from the President of the Office of Competition and Consumer Protection)		–		
C.3	the length of the supplier's existence on the market		–		
C.4	enterprise size		–		
C.5	specialization in the scope of the service provided		–		
C.6	supplier's position on the market		–		
C.7	consumer opinion about the supplier (Rzeszów city)		–		

Source: own study.

4. Empirical Results and Discussion

Based on the analysis of the number and geographical structure of the petrol station network in the Podkarpackie Voivodeship, the following enterprises were indicated for research: PKN Orlen SA (Orlen), BP Europa SE European Company Branch in Poland (BP), Shell Polska Sp. z o.o. (Shell), Circle K Polska Sp. z o.o. (Circle K), Mol Polska Sp. z o.o. (Mol), Anwim SA (Moya station network), Slovnaft Polska SA (Slovnaft Partner), Wtkem Sp. z o.o. (Wtkem) (BP, 2024; Circel K, 2024; Mol, 2024; Moya, 2024; Orlen, 2024; Shell, 2024; Slovnaft, 2024; Wtkem, 2024). The above enterprises included both dependent and independent networks (i.e. Moya, Slovnaft, Wtkem). In the case of other enterprises operating in the studied region, due to the limited number of petrol stations, it was assumed that they were of a secondary (local) nature. The research only took into account the commercial offer dedicated to individual customers. The measurement was made in November 2024.

The measurement results in the Economic and Financial Area are presented in Table 4.

Table 4.

Measurement results in the Economic and Financial Area

PARAMETR	MEASURE							
	Orlen	BP	Shell	Circle K	Mol	Moya	Slovnaft	Watkem
A.1.1	6,30	no data	6,23	6,17	6,23	6,18	6,28	6,19
A.1.2	6,51	no data	6,76	6,52	7,08	6,99	no fuel	6,97
A.1.3	6,25	no data	6,29	6,23	6,28	6,23	6,23	6,24
A.1.4	7,05	no data	6,81/7,75	6,59	6,48	6,79	no fuel	no fuel
A.1.5	3,29	no data	3,29	3,21	3,29	3,20	3,27	3,25
A.2.1	yes	yes	yes	yes	yes	yes	no	yes
A.2.2	yes	yes	yes	yes	yes	yes	no	no
A.3.1	no	no	no	no	no	yes	no	no
A.3.2	yes	yes	yes	yes	yes	yes	no	no
A.3.3	yes		yes	yes	yes	yes	no	yes

Source: own study.

The measurement of the prices of individual fuels was carried out at selected stations located within a radius of approximately 10 km in the provincial city of Rzeszów. Four of these stations, i.e. Orlen, Moya, Slovnaft, Watkem, were located at Sikorskiego Street (the main street leading towards Warsaw Insurgents' Avenue and Rejtana Street). In the case of Circle K on Rejtana Street. BP and Shell stations were located on Warsaw Insurgents' Avenue. Meanwhile, a petrol station operating under the Mol brand is located on Peasant Battalion Avenue (extension of Warsaw Insurgents' Avenue). The measurement was carried out in the morning hours from Monday to Friday, November 18-22, 2024. On November 19-22, 2024, the BP petrol station was closed due to renovation work. The location of the indicated petrol stations is shown in Figure 1.

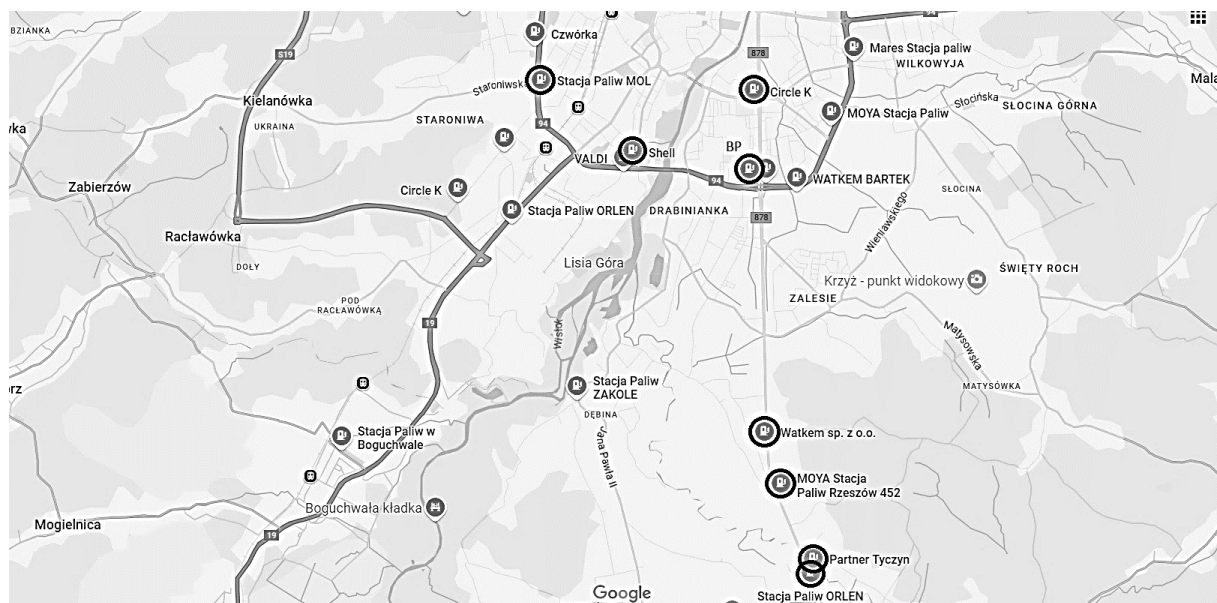


Figure 1. Petrol stations selected for research in the city of Rzeszów.

Source: own study.

In the analysed period, fuel prices posted at the dispensers of individual operators showed deviations. In the case of standard fuels, the difference between the highest and lowest level for Motor Gasoline was 0,13 PLN, for Diesel Oil 0,06 PLN, and LPG 9 PLN. In the case of premium fuels for Motor Gasoline this indicator was 0,57 PLN and for Diesel Oil 0,96 PLN. The lowest prices were recorded at two stations, i.e. Circle K and the independent chain Moya. It should be emphasized that the Circle K petrol station is located in the central part of the city, where numerous shopping centers are located. The Moya petrol station is located at the southern entrance to the city of Rzeszow. Where within a radius of approximately 1 km there are petrol stations operating under the Orlen, Watkem and Slovnaft brands.

The commercial offer of the majority of the examined fuel station chains included value and quantity discounts for individual customers. They were mainly time-limited. They concerned fuel and non-fuel offers (shop, catering, services). Their level was primarily related to the purchasing activity of customers and was linked to loyalty programs. In addition, the Large Family Card was recognized at most of the stations. Which translated into benefits mainly in the form of permanent discounts granted for the purchase of transport fuels.

The measurement results in the Organizational and Technical Area are presented in Table 5.

Table 5.
Measurement results in the Organizational and Technical Area

PARAMETR	MEASURE							
	Orlen	BP	Shell	Circle K	Mol	Moya	Slovnaft	Watkem
B.1.1	no	no	no	no	no	no	no	no
B.1.2	yes	yes	yes	yes	yes	yes	no	no
B.2.1	no	no	no	no	no	no	no	no
B.2.2	yes	yes	yes	yes	yes	yes	no	no
B.3	yes, Orlen Vitay	yes, PayBack, BP Super Card	yes, Shell Club Smart	yes, Circle K Extra	yes, Mol Move	yes, Super Moya	no	no
B.4	yes	yes	yes	yes	no date	yes	no	no
B.5	yes, Orlen Vitay	yes, BP me, PayBack	yes, Shell Club Smart	yes, Circle K	yes, Mol Move	yes, Super Moya	no	no
B.6	yes	no	yes	yes	yes	yes	no	no
B.7.1	yes	yes	yes	yes	yes	yes	no	no
B.7.2	yes	no	yes	yes	no date	yes	no	no
B.8.1	yes	yes	yes	yes	yes	yes	no	no
B.8.2	yes	yes	yes	yes	yes	yes	no	no
B.8.3	yes	yes	yes	yes	yes	yes	no	no
B.9	yes	no	no	no	no	no	no	no
B.10.1	yes	yes	yes	yes	yes	yes	no	no
B.10.2	yes	no	yes	yes	no	yes	no	no
B.10.3	yes	no	yes	no	no	no	no	no
B.10.4	yes	no	yes	yes	no	yes	no	no
B.10.5	yes	no	no	no	no	no	no	no
B.10.6	yes	no	no	no	no	no	no	no
B.10.7	yes	yes	yes	yes	yes	yes	no	no
B.10.8	yes	no	no	no	no	no	no	no
B.10.9	yes	no	no	no	no	no	no	no
B.10.10	yes	yes	yes	yes	yes	yes	no	no
B.10.11	no	partner shop in PayBack	no	no	no	no	no	no

Cont. table 5.

B.11.1	yes	no	no	yes	no	no data	no	no
B.11.2	no	no	no	no	no	no data	no	no
B.11.3	no	no	no	no	yes, only through the website	no data	no	no
B.11.4	yes	no	yes	yes	yes	no data	no	no
B.11.5	yes	no	no	no	no	no data	no	no
B.11.6	yes	no	yes, limited assortment	no	yes, only through the website	no data	no	no
B.11.7	yes	no	yes	yes	yes, only through the website	no data	no	no
B.11.8	no	no	no	no	no	no data	no	no
B.12.1	yes	yes	yes	yes	yes	yes	no	yes
B.12.2	yes	yes	yes	yes	yes	yes	no	yes
B.12.3	yes, Orlen Stop.Cafe	yes, Wild Bean Caffè	yes, Shell Caffè	yes	yes, Fresh Corner, SUBWAY	yes, Coffe Moya	no	yes
B.12.4	no	no	no	no	no	no	no	no
B.12.5	no	no	no	no	no	yes, on selected stations	no	no
B.12.6	yes	yes	yes	yes	yes	yes	no	no
B.12.7	yes	no	no	no	no	yes, on selected stations	no	no
B.12.8	yes	no	no	no	no	no	no	no
B.12.9	yes	no	yes	no	no	yes	no	no
B.12.10	yes, on selected stations	yes, on selected stations	no	no	no	no	no	no
B.12.11	yes	no	no	no	no	no	no	no
B.12.12	yes, on the selected ones, i.e. 4496, 1280, 4224	no	no	no	no	yes, on the selected ones, i.e. 387, 452, 317	no	no
B.12.13	Orlen Foundation	catering services on request	no	catering services on request	e-motorway ticket	automatic stations, i.e. 457, 340	no	no
B.13*	83	23	15	25	5 (including 3 stations with the Lotos logo)	30	9	11
B.14	215,0 /25,1	775,9 /90,7	1189,7 /139,1	713,8 /83,4	3569,2 /417,2	594,8 /69,5	1982,9 /231,8	1622,3 /189,6
B.15	24h	24h	24h	24h	24h	11/30	1/9	8/11
B.16.1	yes	yes	yes	yes	yes	yes	no	yes
B.16.2	yes	yes	yes	no	no	no	no	no
B.16.3	yes	yes	yes	yes	no	yes	no	no
B.16.4	no	no	no	yes	no	yes	yes	no
B.17	dispersion	dispersion	dispersion	dispersion	dispersion	dispersion	dispersion	concentration

* as of December 2, 2024.

Source: own study.

In the case of petrol stations, the main way of establishing permanent cooperation with individual customers was remotely. Agreements were concluded for an indefinite period.

The commercial offer mainly included a loyalty program or a mobile application. In addition, selected ones offered gift cards and an internet platform (e-bok). A complete lack of the above facilities was noted in the case of two independent operators (Slovnaft, Watkem).

Access to the loyalty program was provided mainly through a mobile application. For selected operators, also through an online platform. The loyalty program offer, depending on the number of points collected, included preferential purchase offers for fuels and other products and services available at the gas station. Only one operator (Orlen) noted the possibility of linking a loyalty card to a fuel card.

The mobile application mainly offered access to a loyalty card, discount coupons or petrol station locations. Some operators also provided access to the history of fuel and non-fuel transactions. Documents confirming payment (e-invoice) were less frequently available. Quick payment at the fuel dispenser was also becoming more common. The domestic operator operating under the Orlen brand offered, among other things, an electronic loyalty catalogue, an online shop and navigation.

In the case of the internet platform, the operators most often offered discount coupons or a map of the location of petrol stations. Some of them had a preview of the transaction history. In the case of Orlen petrol stations, an electronic loyalty catalogue or an extensive online store also appeared. In the case of Moya stations, there was a problem with access (logging in) to the internet platform.

In addition to fuel sales, the stations also offered other services. Commonly, a shop, catering, car wash or a public car park. Depending on the purpose of the station and its location, the stations were equipped with infrastructure to service trucks and buses. Additionally, selected domestic enterprises had postal services (own or external). Hotel services were provided primarily by independent operators. In addition, the Moya station's offer included a car repair shop. In the case of Watkem, vehicle inspection stations. In other cases, operators offered 24-hour roadside assistance by providing a hotline. The service of payment at the fuel pump or, in the case of Orlen fuel stations, direct service at the pump has also become popular. Most of the entities surveyed lacked information about the possibility of double-sided refuelling at the fuel pump.

The total number of fuel stations surveyed in the Podkarpackie Voivodeship was 201. The geographical indicator was 88.8 km²/pcs, and the demographic indicator was 10.23 thousand people/pcs. Their structure was dominated by stations operating under the Orlen brand. Their share in the total number of entities surveyed was 41.3%. A high share was also recorded by the Moya chain with a result of 14.9%, Shell 12.4% and BP 11.4%. The location of fuel stations of individual operators in the Podkarpackie Voivodeship was most often dispersed. They were mainly located in cities. In the case of networks of dependent stations, their points were most often located on motorways, expressways and national roads. The dependent networks of fuel stations were available to customers 24 hours a day. In the case of other enterprises, their opening hours were limited in time.

The measurement results in the Security Area are presented in Table 6.

Table 6.

Measurement results in the Security Area

PAR AME TR	MEASURE							
	Orlen	BP	Shell	Circle K	Mol	Moya	Slovnaft	Watkem
C.1.1	yes (95 efecta)	yes (Euro Super 95)	Yes, FuelSave 95)	yes (95 miles)	yes (Evo 95)	yes	yes (Super 95)	yes
C.1.2	yes (98 verva)	yes (98 Ulitimate)	yes (V-Power 95)	yes (98 miles PLUS)	yes (Evo 98)	no	tak (BA 98)	no
C.1.3	yes (Diesel efecta)	yes (BP Diesel)	yes (FuelSave Diesel)	yes (miles Diesel)	yes (Evo ON)	yes	yes	yes
C.1.4	yes (Diesel verva)	yes (ON Ulitimate)	yes (V-Power Diesel, V-Power Racing)	yes (miles Plus Diesel)	yes (Evo ON Plus)	yes (ON Moya Power)	yes (Drive)	no
C.1.5	yes	yes	yes	yes	yes	yes	yes	yes
C.1.6	yes (stations: 4496, 1280, 4224)	no	no	no	no	yes (stations: 387, 317, 452)	no data	no
C.2	not found	not found	not found	not found	not found	not found	not found	not found
C.3	above 5	above 5	above 5	above 5	above 5	above 5	above 5	above 5
C.4	large	large	large	large	large	large	large	medium- sized
C.5	specialized	specialized	specialized	specialized	specialized	specialized	specialized	specialize d
C.6	primery	primery	primery	primery	primery	primery	secondary	secondary
C.7*	4,2 (652 opinions)	4,3 (436 opinions)	3,9 (167 opinions)	4,3 (1373 opinions)	4,4 (408 opinions)	4,5 (133 opinions)	4,8 (25 opinions)	4,4 (142 opinions)

* as of December 2, 2024.

Source: own study.

The commercial offer of the dependent network fuel stations included standard and premium fuels. In the case of independent operators, the situation was different. Access to electricity distributors at network fuel stations in the Podkarpackie Voivodeship was very limited (only at selected Orlen and Moya stations). In the remaining enterprises, the most common was a map of the locations of electric chargers located in the Podkarpackie Voivodeship. In the analysed period, according to the information of the President of the Office of Competition and Consumer Protection, no deviations from the applicable standards regarding fuel quality were found at the examined fuel stations (Regulation, 2015).

The petrol network fuel station belonged to large and experienced enterprises. They were entities associated with domestic and foreign capital. Their activities were specialized. The geographical scope of the commercial offer varied from global, through continental and national, to regional. The position on the market due to the potential they had and the location of individual points was of primary importance. In the case of Watkem stations, due to the

number of points in the country, the geographical scope or concentration of the station location were of secondary importance.

According to the assessment of users of petrol stations, the average rating was above 4.3 (on a scale of 5.0-2.0). The ratings were determined based on anonymous customer opinions posted on Google.pl. They concerned petrol stations located in the city of Rzeszow, where fuel prices were measured.

5. Conclusions

The implementation of the topic and objective of the research allowed to identify the following attributes of the commercial offer of the fuel station network addressed to households in the Podkarpackie Voivodeship, i.e.:

- Wide range of commercial offer. Petrol stations have transformed into commercial and service centres. In addition to the possibility of refuelling, there is a limited sale of fresh, food and industrial goods and catering services are provided. In addition, services related to the maintenance of the vehicle fleet, i.e. parking, car wash or repairs. The leader on the domestic retail market in terms of the breadth of the commercial offer was Orlen and Moya.
- Significant retail price deviation at the fuel pump. In the surveyed operators, despite their close location, a different level of retail prices of individual transport fuels was noted. A large difference in value occurred in the case of premium fuels.
- An extensive and varied discount offer. The commercial offer included value and quantity discounts for individual customers. They were usually time-limited. They concerned both fuel sales and other products offered by petrol stations, as well as services provided. Their level was primarily related to the purchasing activity of customers and was linked to loyalty programs. It reduced the value of purchased goods and services.
- Personalization of the commercial offer. The commercial offer of the fuel station chain addressed to individual customers is a package consisting of available goods and services provided as well as the terms and conditions of handling purchase-sale transactions.
- Speed of establishing cooperation. An remote form is made available and accepted in order to establish permanent cooperation with an individual client.
- Access to the terms of cooperation. Basic information is clearly available on the websites of individual operators. It mainly concerns the method of establishing permanent cooperation, the location of the station, the services provided or the applicable discounts. Additionally, a hotline or a real-time internet conversation is available.

- The preferred form of cooperation is remote. Cooperation with the majority of operators is based on a mobile application. Its functionality allows for the sales process to be increasingly supported.
- Permanent cooperation preferred. Implemented through a shared loyalty program or facilitations in the process of handling purchase-sale transactions.
- Scattering of points of sale. In most cases, the location of fuel stations is characterized by dispersion throughout the Podkarpackie Voivodeship. They are located mainly in large and medium-sized towns and on main communication routes. On the other hand, small towns or roads of secondary importance are dominated by local independent operators.
- The importance of enterprises beyond the regional level. The geographical scope of the commercial offer of the petrol station network goes beyond the surveyed province. Most often, the offer is of a continental nature. It is related to the use of own or partner stations.
- Availability of the offer. The vast majority of network petrol stations provide their services 24/7.

In summary, the implementation of the research topic and objective allowed to indicate the attributes of the commercial offer of the fuel station network addressed to households in the Podkarpackie Voivodeship. The adopted research hypothesis was confirmed. In the article, the actions taken to achieve progress in scientific knowledge led to the expansion of knowledge in the discipline of management and quality science in the area of commercial systems, their organization and management.

During the research procedure, no significant limitations in access to data were noted. Basic information was made available in a clear manner on the websites of individual operators. Most often, it concerned the method of establishing permanent cooperation, the location of the station, the services provided or the applicable discounts. The scope of available data varied, which required supplementation by conducting an indirect interview, i.e. by phone or directly at the petrol station. Most operators have provided a hotline or real-time internet conversation. There have also been no significant limitations in access to the mobile application or the internet platform. Only in the case of one operator, despite access to the mobile application, there was no possibility to log in to the internet portal. On November 19-22, 2024, the BP petrol station was out of service due to renovation work. This limited the measurement of retail prices at this station.

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