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AN ANALYSIS OF DEALERS' INFLUENCE ON THE AUTOMOTIVE MARKET IN THE REPUBLIC OF SERBIA

Abstract

In the paper, the dealer influence on the automotive market is researched both from the aspect of the offer and from the aspect of the development of the dealer network itself in the provision of vehicle maintenance and repair services and their contribution to the market development. The determination of the dealer influence on the automotive market is a complex process both from the point of view of the dealer offer in Serbia and from the point of view of the state in which the economy, particularly so the car market, is. Numerous factors with an interwoven and multiplied influence act on the automotive market. The subject matter of the research study represents a cross-sectional study of an empirical character. During the collection of the data, the survey non-standardized research technique was used. For this purpose, a special questionnaire was created. The collected data were processed by means of the applicative SPSS system (Statistical Package for Social Sciences), simultaneously applying descriptive and comparative statistics. The research results have shown that the greater the dealer development degree in Serbia, the stronger their influence on the automotive market in Serbia. Also, the following factors have the greatest influence on car manufacturing and sale in Serbia: the development of the dealer network, per-capita income and macroeconomic stability. Simultaneously, vehicle maintenance and repair services substantially influence the purchase of cars. A fact was established that the performance parameters of a vehicle also influenced the buyer's choice of a vehicle.

Keywords*: dealers, market, manufacturers, services, marketing, cars*

JEL classification: *F10, D40, L10, M31*

АНАЛИЗА УТИЦАЈА ДИЛЕРА НА ТРЖИШТЕ АУТОМОБИЛА У РЕПУБЛИЦИ СРБИЈИ

Апстракт

У раду се истражује утицај дилера на тржиште аутомобила, како са аспекта понуде, тако и са аспекта самог развоја дилерске мреже у пружању

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сервисних услуга и њихов допринос развоју тржишта. Утврђивање утицаја дилера на тржиште аутомобила је сложен процес, како са аспекта понуде дилера у Србији, тако и са аспекта стања у којем се налази привреда, поготову тржиште аутомобила. На тржиште аутомобила делују бројни фактори који имају испреплетан и мултипликован утицај. Предметно истраживање представља трансверзалну студију, емпиријског карактера. Приликом прикупљања података коришћена је нестандардизована истраживачка техника – анктирање. За ову сврху креиран је посебан упитник. Прикупљени подаци су обрађени апликативним SPSS системом (Statistical Package for the Social Sciences), уз примену дескриптивне и компаративне статистике. Резултати истраживања су показали да што је степен развоја дилера у Србији већи, то је њихов утицај на тржиште аутомобила у Србији јачи. Такође, на производњу и продају аутомобила у Србији највећи утицај имају следећи фактори: развијеност дилерске мреже, доходак становника и макроекономска стабилност. Истовремено, сервисне услуге знатно утичу на куповину аутомобила. Утврђено је и да радне карактеристике утичу на одабир возила, од стране купаца.

Кључне речи: *дилери, тржиште, произвођачи, услуге, маркетинг, аутомобили*

Introduction

The automotive industry is increasingly gaining in significance in the business operations of companies of all sizes, as well as for consumers and national economies. At the same time, the automotive industry is an important sector of the global economy given the fact that this sector contributes with almost 3% of the global GDP, with sales having simultaneously reached record 88 million cars in 2016 (Vychytilová et al., 2019).

The key difference between the domestic automotive industry and the European automotive industry lies in a larger number of the dimensions and the complexity of the numerous foreign markets on which a firm does business. There are numerous models of analysis, but the different aspects and trends that come to light on the international market will be analyzed for the purpose of this research study through social/cultural, legal, economic, political and technological dimensions.

Many countries introduced programs for the replacement of "the old with the new" so as to mitigate the overall fall in the economic activity, but they also increased the sale of cars in a short term. Given the fact that such programs are only short-term and based upon transferring the purchase from the future to the present, an increase in sales might have an opposite effect once such programs are abolished (Tričković, 1983, p. 3). The role of dealers in the automotive industry is increasingly gaining in significance with respect to the manufacturing volume, as well as car models. Without their presence, the placement of products, the product price and marketing activities, too, are brought into question. One of the main problems of contemporary business doing enterprises, and dealers as well, are faced with is the adoption (on their part) of one long-term business model instead of relying on short-term goals.

Marketing is the basis of market appearance. It is not only present in manufacturing organizations, but also in those dealing with the turnover of goods and services in trade, traffic, catering and tourism, briefly saying in all those activities in which business organizations are forced to fight for the placement of their products due to the presence of competition on the market (Tričković, 1983, p. 3).

It is the task of the car manufacturer's marketing to establish contacts with the external actors (the competition and buyers) whose existence is of an independent nature. The survival itself of the car manufacturer depends on how well the management adapt to the market conditions which are under the influence of the activities of a large number of market actors in the automotive industry.

User services, stock management and using production capabilities should be considered in an integrated manner (Godlewska-Majkowska & Komor, 2017). The concept of successful service organization is a set of the created quality resources included in the production of a service, i.e. people (the personnel and consumers on an equal footing), then technology, physical resources, operational systems and administration (Stojanović, 2018, p. 36).

Searching for a differential advantage on the automotive market is a creative process requiring a long-term vision and notional ability. The creation and operationalization of the car manufacturer's marketing mix implies an active treatment of market movements and internal possibilities. The majority of the available studies more or less agree that buyer orientation, competition orientation and inter-functional coordination are the most important elements of market-orientation (Kanovská & Tomášková, 2014).

Literature Review

In the developmental technological process, the roles of research, development and knowledge become the basis for the explanation of only economic and social development. The indicator of the connectedness between science and empirically gained knowledge in the contemporary epoch of development, as well as the thesis that, thanks to research and development, the time needed for applying the types of knowledge verified as innovations, i.e. inventions, in the manufacturing context as well rapidly decreases, also arise from that fact (Jelenković, 2015, p. 61). Attracting new foreign direct investments in the Serbian automotive sector is the key to the development of the domestic economy and an increase in the competitiveness of the automotive sector. "Automotive and business cycles are usually monitored closely although amplitudes inside the automotive industry are greater. The instability of the automotive industry is also greater than in the whole manufacturing industry (Jelenković, 2015, p. 61)." The inherent variability of the economic situation influences the basic factors that determine the balance between profits and losses in the automotive industry (Boj et al., 2019).

The acceptance of the implementation of corporate sustainability and reporting on sustainability have continuously been increasing in recent years (Sukitschet et al., 2015). Today, both practitioners and scientists accept the fact that the acceptance of the principles of corporate sustainability and the improvement of buyer loyalty may bring relevant business benefits (Moisescu, 2018). Namely, company loyalty and profitability are strongly connected with the process of the creation and delivery of buyer value (Scridon

et al., 2019). In recent years, an accelerated promotion of the modern urban motorization process has led to traffic problems including traffic jams, traffic accidents, air pollution and energy consumption (Shuaiyang et al., 2020). Consequently, the integration of ecological goals in all the aspects of the enterprise's activities (from the formulation of a strategy, planning, design in manufacturing, as well as doing business with consumers) has been promoted in the manufacturing field. For that reason, organizations have to find solutions to ecological challenges through marketing strategies, products and services, while simultaneously still remaining competitive (Petrović, 2007, p. 138). Because of sustainability challenges, the growing industrial concern has forced vehicle and car-part manufacturers to adopt service possibilities as a way to maintain competitiveness in accordance with ecological regulations (Opazo-Basáez, 2018). Namely, there is a positive connection between sustainable entrepreneurship and business performance (Galant & Cadez, 2017).

Consumers and organizational buyers constantly endeavor to obtain as much as possible for as little as possible in the exchange process. Both groups appraise what they give for what they obtain (Milenović & Ratković, 2012, p. 34). In the automobile context, safety is the key characteristic of the product (Wurster & Schulze, 2020). The planning strategy represents the process of the improvement and application of an appropriate line of action regarding the direction that an enterprise should unconditionally follow so as to achieve its goal (Stojanović, 2019, p. 191). The strategy of the manufacturing entity itself, or the dealer, is also of exceptional significance – how the enterprise creates value and in which manner it achieves its competitive advantage, while the sources of the cost advantage depend on the structure of the given industry. "A strategy implies that the enterprise is unique in the dimensions highly valued by consumers, because of which fact they reward it by accepting its premium prices. A business strategy is brought into connection with the performances of the enterprise, while simultaneously a distinction is made between the strategies that ensure a high level of performances, i.e. between proactive and reactive strategies. Proactive strategies imply taking the initiative and they encompass the activities that, by putting them into the limelight, highlight the quality of the product, the innovations of products and services, the development of new technologies and the opening of new markets and consumer support services as well. The enterprises that follow reactive strategies usually only follow other enterprises and react to events occurring in the environment, without a possibility of acting upon them (Stojanović, 2019, p. 191)."

Also, the spare part supply chain is of key significance for the automotive industry, which belongs to logistical support to both the manufacturer and the buyer – dealer in today's time. "In the automotive industry, supply chains encompass a large number of participants, i.e. the interconnected organizations whose goals is to deliver a product or parts for the end user by carrying out different activities and conducting different processes (Stojanović, 2019, p. 191)." Today, all car manufacturers treat vehicle maintenance and repair services at their sellers as highly significant in order to satisfy their clients and tend to improve them as much as possible. The whole spare part supply chain must be focused on the manner that enables a quick and easy adaptation to changes on the market. Pursuant to that, the supply chain is a complex manufacturing system consisting of a network of manufacturers and service providers connected with the logistical systems providing transportation and storage (Groznika & Trkman, 2012).

In order for an enterprise's marketing communication to be successful, i.e. in order for an enterprise to achieve its set goals, a creative message is, therefore, of enormous importance. Creativity is a very important aspect of the market economy. One of the most important conditions for survival in the competition between organizations, however, implies creativity and innovativeness as its application (Kačerauskas, 2016). The message of the right content and the right form (Brkić, 2003, p. 262). Those better knowers and visionaries considered that automobiles would soon become a necessary need of today's man and that they would give impetus to his work and creativity, greater possibilities for holidays and faster travel, which on its part would all therefore help him raise his living standard faster.

Numerous decision-making problems are mainly solved in conditions of uncertainty (Russell et al., 2012). Risk in business doing should be managed adequately (Hassani, 2019). One of the initial steps in any efficient risk management strategy is the exact measurement of market risks (Ho et al., 2017). The anticipation and understanding of clients' characteristics and their demand and need for personalized services may contribute to the improvement of business operations and, ultimately, an increase in profitability by using the electronic client relationship management system (Peštek & Lalović, 2012). What the state would invest in that kind of industry would pay in a very short period of time, not only materially speaking. Once that host factor was mentioned, yet another important argument came to light: our market craved, inter alia, for cars.

Satisfied buyers are likely to become regular buyers, so repeated purchases will turn into the economic value of the enterprise, which enables the maintenance of its market share and the profitability of its business operations on a highly competitive market (Lee & Salciuviene, 2018). The success of business organizations and institutions is strongly connected with their ability to establish labor between themselves and efficiently manage teamwork (Zubanov et al., 2017). Pieces of information as such are no longer the key source of success; it is rather the real knowledge connected with a certain holder – employees, who must constantly develop it in a currently highly competitive environment (Urbancová et al., 2016). Today, the automotive industry is one of the most prominent sectors in Serbia, which has attracted a large number of total foreign direct investments since 2001. So far, several tens of international companies have invested in this sector, having invested more than 1.7 billion euros and having opened several tens of thousands of workplaces. Serbia's automotive industry supplies numerous larger-size European and certain Asian car manufacturers with its products.

Should the structure of the automotive industry be observed, it can be said to consist of suppliers, i.e. part manufacturers, car manufacturers themselves or the sale-service network. The part manufacturer industry is determined as a big independent group of manufacturers manufacturing and selling ready products to domestic and foreign car manufacturers and the service network as well (Haugh et al., 2010). A research study conducted by the Center for Automotive Research in 2010 shows that the employment multiplicator in the automotive industry is very high and can be observed from several points of view (Wallace et al., 2011). If the number of employees only at car manufacturers is compared in relation to the total number of the employed in the automotive industry, then the multiplicator is around 10, which means that there are 10 additionally employed in the overall automotive industry on every employee at the car manufacturers. When the multiplicator is observed in relation to part manufacturers, then it is 4.6, and 2.1 for the

sale network, which generates the multiplicator of 4.6 for the overall automotive industry. This analysis of employment was carried out on the example of the automotive industry in the USA, so the same is mainly applicable to every state that manufactures cars, due to the global connectedness of the overall automotive industry (Bilas & Franc, 2013). Pursuant to that, the so-called trade orientation is becoming stronger (Wolf, 2016). "In many car manufacturing countries, a large segment of production is exported. The export of cars accounts for over 20% of the export products of Japan, Slovakia, Hungary, Canada and Spain, and around 15% of the other manufacturing countries. Car manufacturers had to adapt their production given the fact that almost all the countries that manufacture cars had recorded a fall in production in 2008, especially so a big fall had been recorded in the countries such as France, Spain, and Italy (Sturgeon & Biesebroeck, 2010). In the USA, a fall in the sale of permanent goods, then the investment of enterprises in the purchase of cars, contributed 20% to 30% to the fall in the GDP in the second half of 2008 (Council of Economic Advisers, 2009).".

Research Methodology

The subject-matter research is a cross-sectional study of an empirical character. Namely, the empirical research was conducted on the Renault dealers in the Serbian territory. "While collecting the data, a survey was conducted as a non-standardized research technique. For this purpose, a special questionnaire was created. The collected data were processed by means of the applicative SPSS system (Statistical Package for Social Sciences), with the application of descriptive and comparative statistics. The examination was carried out by handing in the Questionnaire in person and by sending it electronically, too (Tričković, 1983)." The basic and three ancillary hypotheses are set in the paper:

The basic hypothesis (H0) reads as follows: The greater the degree of the dealer development in Serbia, the stronger their influence on the Serbian automotive market.

The ancillary hypotheses (AH) read as follows:

AH1 – The following factors have the biggest influence on car manufacturing and sale in Serbia: the development of the dealer network, per-capita income and macroeconomic stability.

AH2 – Vehicle maintenance and repair services considerably influence the purchase of cars.

AH3 – Performance parameters influence buyers' choice of a car.

The determination of dealers' influence on the automotive market is a complex process both from the aspect of the dealer offer in Serbia and from the aspect of the state in which the economy, especially the automotive market, is. The automotive market is acted upon by the numerous factors that exert an interwoven and multiplied influence. Consequently, the precise evaluation of the influence of dealers has been made significantly more difficult and, in many situations, requires a highly sophisticated statistical methodology, whose application requires that numerous conditions should be met.

Results and Discussion

The basic hypothesis (H0): The greater the degree of the dealer development in Serbia, the stronger their influence on the Serbian automotive market.

The testing of this hypothesis is represented by the analysis of the respondents' attitudes towards the influence of the development of dealers on the development of the automotive market in Serbia. So, the testing of this hypothesis was for the purpose of proving that the factors that determine the development of dealers in Serbia produce a positive effect on the automotive market development trend. The respondents' attitudes were graded through an ordinal scale from 1 (the nonexistence of the influence of the analyzed factor) to 5 (for the opinion reflecting the existence of a very significant influence between the analyzed variables). Should the respondents consider that the analyzed factors are more than moderately significant for the development of the Serbian automotive market, the medians of the grades assigned to them by the respondents will be statistically greater than 3. A standard t-test would be the appropriate statistical test that might be applied in situations like this, on condition that the data can be measured on a continual measurement scale and by a desirable normal distribution. In the case required by the analyzed data, namely the data of an ordinal nature, and without a distribution known in advance, it is necessary that an appropriate nonparametric statistic alternative should be used. The t-test nonparametric alternative which represents a very efficient test in making statistical conclusions is known as the Wilcoxon Signed-Rank Test, and the mentioned test was used in this particular case.

The null hypothesis of this test always assumes the equality of the median with the preset value, which is the value 3 in this case. The results of the Wilcoxon Signed-Rank Test are accounted for in Table 1 below.

Table 1: The results of the Wilcoxon Signed-Rank Test for the grading of the factors that influence the development of dealers

Hypothesis Test Summary				
	Null Hypothesis	**Test**	**Sig.**	**Decision**
1	The mean value of the Size of the Market equals 3.000.	Wilcoxon Signed-Rank Test	.000	Reject the Null Hypothesis.
2	The mean value of Marketing equals 3.000.	Wilcoxon Signed-Rank Test	.000	Reject the Null Hypothesis.
3	The mean value of Insurance equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.000	Reject the Null Hypothesis.
4	The mean value of Education equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.000	Reject the Null Hypothesis.
5	The mean value of Specialization equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.000	Reject the null hypothesis.
6	The mean value of Complaint(s) equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.000	Reject the Null Hypothesis.

7	The median from the Services equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.000	Reject the Null Hypothesis.
8	The median of the Direct Sale Company equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.000	Reject the Null Hypothesis.
9	The median of the Indirect (Intermediary) Sale Company equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.000	Reject the Null Hypothesis.
10	The median of the Buyer Habits equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.000	Reject the Null Hypothesis.
11	The median of the Technological Equipment equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.000	Reject the Null Hypothesis
12	The mean value of the Market Coverage equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.000	Reject the Null Hypothesis.
13	The mean value of Competitiveness equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.000	Reject the Null Hypothesis.
14	The mean value of Buyer Crediting equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.045	Retain the Null Hypothesis.
15	The mean value of the Sale of Diesel Vehicles equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.000	Reject the Null Hypothesis.
16	The average of Petrol Vehicle Sales 3.000.	One-Sample Wilcoxon Signed-Rank Test	.008	Retain the Null Hypothesis.
17	The median of Hybrid Vehicle Sales equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.000	Reject the Null Hypothesis.
18	The average of Electrical Vehicle Sales equals 3.000.	Wilcoxon Signed-Rank Test	.000	Reject the Null Hypothesis.
The used significance level is .05.				

Source: Authors

The first column of the above table contains the Null Hypothesis in the form reading as follows: "the median of the mentioned factors equals 3." In the continuation, the p-values were calculated, based on which the conclusions were made whether each individual null hypothesis should be rejected or not. In accordance with the standard decision-making rule (if the achieved p-value is lesser than the selected significance level, the null hypothesis should be rejected with a defined risk of error), it was concluded that, in the case of all the 18 analyzed factors, the Wilcoxon Signed-Rank Test suggested the inequality of the medians from the assumed value and the rejection of the null hypothesis. Although the applied statistical test is two-sided, which means that the rejection of the

null hypothesis does not have to imply that the sample median is greater than the assumed value, taking into consideration the previously calculated descriptive statistics, which are greater than 3 in the case of 16 out of the 18 analyzed factors, it can be concluded that the respondents consider these 16 factors to be (strongly) significant in the studied context. For the previously mentioned two factors whose average grades were below the level of the median (the sale of hybrid vehicles and the sale of electrical vehicles), the null hypothesis is also rejected, but the conclusion reads that the respondents consider that there is no influence exerted by these factors that can be considered as significant. Observed as a whole, the dominant number of the analyzed factors that are significant for the development of dealers is assessed by the respondents as very important for the development of the Serbian automotive market, so the assertion of this hypothesis can be accepted with the selected significance level of 5%.

The ancillary hypothesis (AH1): The following factors have the biggest influence on car manufacturing and sale in Serbia: the development of the dealer network, per-capita income and macroeconomic stability.

This hypothesis was tested by performing factor analysis. This known multi-variation analysis technique can be used to generate very useful inputs for decision-makers from the aspect of setting the focus on several factors instead of a large number of defined parameters (variables). As the assertion of the hypothesis implies the discovery of the key factors that are basically responsible for the movement of automobile manufacturing and sale, the application of factor analysis should ensure a solid base from the described point of view. In the described manner, instead of directing attention towards a large number of the predetermined variables and by performing the procedure for their further reduction, the conditions for the creation of the optimization of the factors singled out are met, which further contributes to the growth of business in a broader context. The first part of the application of the described technique is the calculation of the basic indicators of descriptive statistics (Table 2). The questions pertaining to the assessment of the significance of the factors deserving for the development of car manufacturing and sale in Serbia are shown in Table 2 below, together with the results of the descriptive statistics of the respondents' grades.

By providing answers to Question 14 of the Questionnaire, the respondents graded the significance of the individual factors for the development of car manufacturing and sale in Serbia, by giving the grades 1 (the insignificant factor), …, 5 (the highly significant factor), as was the case in the previous question. In this case as well, the results of the analysis demonstrated that the grades for the significance of almost all of the mentioned factors were above the average, while simultaneously there was very high compliance amongst the grade. The four factors that might be isolated and that are in the leading positions in relation to all the others are the availability of points of sale, the car purchase funding model, the competition and the influence on fixing prices. Of the 16 analyzed factors included in this block, the Foreign Investments and Market Liberalization factors, which were not graded with a mark above 3 on average (the median value), come to the forefront, which allows us to conclude that, according to the attitudes expressed by the respondents, they have slightly lesser significance for car manufacturing and sale in Serbia. In this phase already, a fact that the largest number of the analyzed variables (factors) were considered by the respondents as very significant for the development of car manufacturing and sale in Serbia was confirmed.

Table 2: In your opinion, provide grades for the factors significant for the development of car manufacturing and sale in Serbia ranging from 1 to 5 (1-the insignificant factor, 5-the highly significant factor)

	H	Arithmetic mean	Standard deviation
The availability of points of sale (showrooms)	60	4.3000	.64572
The car purchase funding model	60	4.3333	.60132
Foreign investments	60	2.4167	1.26614
Information technology	60	3.1333	1.03280
Competition	60	4.4500	.69927
Market liberalization	60	2.4667	1.53454
Political influence	60	3.4833	1.12734
Technical progress	60	4.2667	.63424
Social richness	60	3.8667	.83294
A new product	60	3.9333	1.23325
A new market	60	3.2000	.97076
Contemporary equipment	60	4.0500	.56524
An influence on price fixing	60	4.3667	.78041
Personal income	60	4.2833	.89868
Other income	60	3.3500	.86537
Income tax	60	3.5667	1.06352
Total H (the list)	60		

Source: Authors

In the continuation of the research, correlation analysis was performed as per all the pairs of the observed variables and, in the largest number of cases, statistically significant correlational dependence (< 0.05) was determined. Apart from the fact that the connection between the different pairs of the analyzed variables whose significance was being graded was confirmed, the first level of the factor analysis from the aspect of grouping the mentioned variables into certain groups (factors) was also ensured in that way.

The next level of the performance of factor analysis implies the performance of the selected sample adequacy test – Bartlett's Sphericity Test. In Table 3 below, the results of this test are presented, from which a conclusion is made that the given sample fulfilled the assumption of adaptation, i.e. adequacy (< 0.05).

Table 3: The results of Bartlett's Sphericity Test

Kaiser-Meyer-Olkin's Sample Adequacy Test		.595
Bartlett's Sphericity Test	Chi-Square	1088.225
	Number of Freedom Degrees	120
	p-Value	.000

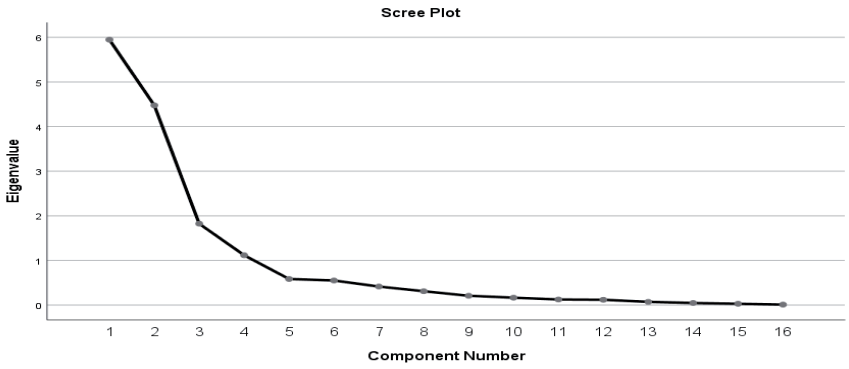
Source: Authors

In the next phase, communality values were calculated for all of the analyzed variables, based on which recommendations followed regarding which of them should be retained and which variables would be contained in the isolated factors. In order to ensure the condition that all the selected variables were contained in one single factor at the most, a rotation of the factors was performed by applying the varimax method, after which the factors by means of which the largest portion of the variability of the studied phenomenon (the development of car manufacturing and sale) could be explained were presented. Table 4 shows that as much as 83.52% of the total variability of the analyzed phenomenon can be explained by a total of the four factors selected by the main component method, which is also pointed to by the scree plot shown in Figure 1.

Table 4: The results of the main component analysis – the identification of the isolated factors

Integral part	Initial eigenvalues			Sum of Squares Extraction			Squared Loading Rotation Sums		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.947	37.170	37.170	5.947	37.170	37.170	4.336	27.099	27.099
2	4.476	27.973	65.143	4.476	27.973	65.143	4.262	26.636	53.736
3	1.823	11.396	76.539	1.823	11.396	76.539	3.274	20.462	74.198
4	1.117	6.979	83.518	1.117	6.979	83.518	1.491	9.320	83.518
5	.585	3.654	87.172						
6	.551	3.441	90.614						
7	.415	2.596	93.209						
8	.310	1.939	95.148						
9	.208	1.301	96.450						
10	.166	1.036	97.485						
11	.125	.781	98.266						
12	.119	.743	99.010						
13	.073	.455	99.465						
14	.047	.291	99.756						
15	.029	.182	99.938						
	.010	.062	100.000						

Source: Authors



Graph 1: The identification of the isolated factors – the Scree Plot
Source: Authors

In order to define the selected factors by which the analyzed phenomenon can be explained in the last phase of the factor analysis, i.e. the factors that explain the largest part of its variability, the known (usual) rule stipulating that those variables with a weight (loading) greater than 0.6 are retained inside the factors was applied. Table 5 below contains the obtained rotated solution of the selected factors with the associated variables to each one of them.

Table 5: The matrix of the rotated factors – the Varimax Method

	Integral part			
	1	2	3	4
The availability of points of sale (showrooms)	**.936**	.047	.043	.224
The car purchase funding model	**.920**	.104	-.039	.258
Foreign investments	-.138	**.908**	.071	.094
Information technology	.174	**.793**	.306	.329
Competition	**.860**	.117	-.041	.124
Market liberalization	.494	.220	**.720**	.092
Political influence	-.764	**.772**	.180	.310
Technical progress	**.878**	.236	.184	-.115
Social richness	.296	.528	.591	-.387
A new product	-.478	.408	**.733**	-.013
A new market	**.652**	.034	.274	.495
Contemporary equipment	**.627**	.297	.330	.171
An influence on price fixing	.076	.075	**.876**	.123
Personal income	.097	.311	.088	**.823**
Other income	-.580	.516	.529	**.656**
Income tax	-.450	**.739**	.360	.068

Source: Authors

The first factor to have been formed contains the six variables displayed in Table 6. Each of these variables is considered as exceptionally significant for the development of car manufacturing and sale in Serbia, which has previously already been confirmed by the results of the descriptive statistics of the grades for their significance assigned to them by the respondents. **By the analysis of the selected variables, it can be concluded that each one of them demonstrates direct correlation with the development of the dealer network as a whole, so this factor can exactly be named in that way**. The "availability of points of sale (showrooms)" variable has the greatest weight in this factor, which is simultaneously also one of the most significant determinants of the development of the dealer network.

Table 6: Factor 1

Variable		Entry
1	The availability of points of sale (showrooms)	**.936**
2	The car purchase funding model	.920
5	Competition	.860
8	Technical progress	.878
11	A new market	.652
12	Contemporary equipment	.627

Source: Authors

The next factor selected the four variables contained in Table 7, namely the variables: Foreign Investments, Information Technology, A Political Influence and Income Tax. Each of them simultaneously represents the component of the **macroeconomic stability** of a country, which consequently makes up the base for the development of car manufacturing and sale in our country.

Table 7: Factor 2

Variable		Entry
3	Foreign investments	**.908**
4	Information technology	.793
7	Political influence	.772
16	Income tax	.739

Source: Authors

Factor 3 (Table 8), which was formed by the performed multi-variation analysis technique, joined the variables: Market Liberalization, A New Product, and An Influence on Price Fixing, while simultaneously the greatest weight (loading) accounts for the last one. All the mentioned variables are simultaneously also directly connected with the development of the dealer network and macroeconomic stability as well, so they can be classified into both the first and the second previously formed groups (factors).

Table 8: Factor 3

Variable		Entry
6	Market liberalization	.720
10	A new product	.733
13	An influence on price fixing	**.876**

Source: Authors

Finally, the formed Factors joined the two variables of the Question 14 of the Questionnaire, those variables being Personal Income and Other income. In this case, the elements that basically determine the **income of the population** of every country are unambiguously in question, which further produces direct correlation with the development of car manufacturing and sale in that particular country. The dominant influence in this sense belongs to the Personal Income variable (Table 9).

Table 9: Factor 4

Variable		Entry
14	Personal income	**.823**
15	Other income	.656

Source: Authors

When the results of the conducted factor analysis are ultimately summed up together with the identified factors, a conclusion can be drawn that, in the context of their

influence on the development of car manufacturing and sale in Serbia, all the selected variables can be classified into the following three groups: the development of the dealer network, macroeconomic stability and per-capita income, which proves the assertion of this hypothesis.

The ancillary hypothesis (AH2): Vehicle maintenance and repair services considerably influence the purchase of cars.

In the procedure of the testing of the mentioned hypothesis, the respondents' answers contained in Question 15 were used. This group of questions pertains to the vehicle maintenance and repair services offered by car showrooms from the aspect of their influence on the purchase of a car. The testing was done as in the case of the hypothesis H0, given the fact that the identical research problem is in question. The results of the Wilcoxon Signed-Rank Test are presented in the following Table 10.

The results obtained are indicative of the fact that, in the case of 9 out of the 12 analyzed types of the vehicle maintenance and repair services which are available to the prospective clients of the car showroom, their influence on the very purchase of a car were confirmed. Namely, except for the case of the three types of the vehicle maintenance and repair services (i.e. chemical treatment, aluminum rims maintenance and repair and automatic gearbox maintenance and repair), the respondents consider all the other types of the vehicle maintenance and repair services as (very) significant from the point of view of their encouragement of/influence on the purchase of a car. Given the fact that, in 75% of the vehicle maintenance and repair service types that were analyzed, their significance from the mentioned point of view was confirmed, the assertion of this hypothesis can be considered as proven at the significance level of 5%.

Table 10: The results of the Wilcoxon Signed-Rank Test for the grading of the significance of the vehicle maintenance and repair services

Hypothesis Test Summary				
	Null Hypothesis	**Test**	**Sig.**	**Decision**
1	The mean value of regular vehicle maintenance and repair equals 3.000.	Wilcoxon Signed-Rank Test	.000	Reject the Null Hypothesis.
2	The mean value of the vehicle air-conditioning equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.000	Reject the Null Hypothesis.
3	The median of tire maintenance and repair services equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.000	Reject the Null Hypothesis.
4	The mean value of chemical treatment equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.866	Retain the Null Hypothesis.
5	The median of brake maintenance and repair equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.000	Reject the Null Hypothesis.
6	The median of the vehicle exhaust pipe maintenance and repair equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.000	Reject the Null Hypothesis.

7	The median of the vehicle chassis maintenance and repair equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.000	Reject the Null Hypothesis.
8	The median of the aluminum rim maintenance and repair equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.423	Retain the Null Hypothesis.
9	The median car maintenance and repair equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.239	Retain the Null Hypothesis.
10	The mean value of engine injectors equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.000	Reject the Null Hypothesis.
11	The mean value of electrical installations equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.000	Reject the Null Hypothesis.
12	The median of the other vehicle maintenance and repair services equals 3.000.	Wilcoxon Signed-Rank Test	.000	Reject the Null Hypothesis.
The used significance level is .05.				

Source: Authors

The ancillary hypothesis (AH3): Performance parameters influence buyers' choice of a car.

To test this hypothesis, the section contained in Question 16 of the Questionnaire was used. This group includes the respondents' attitudes towards the influence of the individual performance parameters of a car on car buyers' choice of a car. The results of the conducted Wilcoxon Signed-Rank Test are contained in Table 11. The formal statistical test that was done confirmed the initial assumptions.

Namely, it was proven for the following performance parameters: the electric motor, the hybrid engine, change in power with change in speed, and the number of cylinders in the engine, that the null hypothesis about the equality of the median of the examined factors was rejected; but, given the fact that the average grade for the mentioned factors was below 3, it can be considered that they do not create an influence on individuals when making a choice of a vehicle.

Regarding all the other performance parameters that were analyzed, it was also confirmed that the null hypothesis was rejected; however, the average values of the grades for significance for those characteristics highly exceeded the median, which finally confirmed their (significant) influence of the choice of a vehicle. Given the fact that a statistically significant connection with the choice of a vehicle was determined in the case of 67% of the analyzed vehicle performance parameters, the assertion of this hypothesis can also be justified, with the previously used risk of error.

Table 11: The results of the Wilcoxon Signed-Rank Test for the grades for the significance of the vehicle performance parameters

Hypothesis Test Summary				
	Null hypothesis	**Test**	**Sig.**	**Decision**
1	The median power of the engine power equals 3.000.	Wilcoxon Signed-Rank Test	.000	Reject the Null Hypothesis.
2	The mean value of the number of rotations equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.000	Reject the Null Hypothesis.
3	The mean value of the speed characteristics equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.000	Reject the Null Hypothesis.
4	The mean value of the loading characteristics equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.866	Retain the Null Hypothesis.
5	The median of the regulator characteristics equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.000	Reject the Null Hypothesis.
6	The median of the speed characteristics at the maximum loading equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.000	Reject the Null Hypothesis.
7	The mean value of the diesel engine equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.000	Reject the Null Hypothesis.
8	The mean value of the petrol engine equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.000	Reject the Null Hypothesis.
9	The mean value of the electric motor equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.000	Reject the Null Hypothesis.
10	The mean value of the hybrid engine equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.000	Reject the Null Hypothesis.
11	The median of changes in power with change in speed equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.013	Retain the Null Hypothesis.
12	The mean value of the number of cylinders in the engine equals 3.000.	One-Sample Wilcoxon Signed-Rank Test	.045	Retain the Null Hypothesis.
Asymptotic significances are displayed. The significance level is .05.				

Source: Authors

Conclusion

The increasingly pronounced globalization of the market has been changing the competitive structures of the world, offering increasingly strong competition on all fronts. The automotive industry has been gaining in significance in the business operations of companies of all sizes, as well as for all consumers and national economies. Business organizations must devise and apply the appropriate strategies that will enable them to absolutely use up the key potentials and resources and, in return, create and maintain advantage over their main competitors if they want to survive and develop in today's changeable and complex business environment.

The basic (H0) hypothesis and the three ancillary hypotheses (AH) have been confirmed, as well as the contemplative assumptions about the outcome of the solution to the scientific problem of the research: H0 – The greater the degree of the dealer development in Serbia, the stronger their influence on the Serbian automotive market. AH1 – The following factors have the biggest influence on car manufacturing and sale

in Serbia: the development of the dealer network, per-capita income and macroeconomic stability. AH2 – Vehicle maintenance and repair services considerably influence the purchase of cars. AH3 –Performance parameters influence buyers' choice of a car. Attracting new foreign direct investments in the Serbian automotive sector is the key to the development of the domestic economy and an increase in the competitiveness of the automotive sector, which as such will have the potential and an opportunity to become competitive with the automotive sectors of the analyzed countries of the Višegrad Group. All in all, the evidence points to the fact that future opportunities will be surpassing challenges.

As directions for further work on this research, the improvement of the preliminary solution to the optimal model that will indicate the comprehensive positive or negative influence of the individual factors of dealers' influence on the placement of cars in Serbia is proposed.

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