

# TESTING THE ATTITUDE TOWARD THE USE OF E-COMMERCE BASED ON THE CUSTOMER'S EDUCATIONAL LEVEL: THE CASE OF THE REPUBLIC OF SERBIA

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# TESTING THE ATTITUDE TOWARD THE USE OF E-COMMERCE BASED ON THE CUSTOMER'S EDUCATIONAL LEVEL: THE CASE OF THE REPUBLIC OF SERBIA

## ABSTRACT

The subject of this paper is to examine to what extent and in which way educational level influences the use of e-commerce in the Republic of Serbia, as well as, in part, to examine customer satisfaction with e-commerce. The main objective of this paper is to determine the level of customer use of e-commerce depending on their educational level, as well as to spot the areas which need to be improved in order to increase the degree of use of e-commerce in the Republic of Serbia. For the purposes of sorting and grouping the data in this study the statistical method has been used. All collected data were processed in the statistical software SPSS (descriptive and parametric analyses were used, as well as comparison of mean values, correlation and regression). Based on the results of the tests conducted it is to conclude that the respondents generally use e-commerce in Serbia on a small scale and that other technological advances are accepted to a greater extent than e-commerce. The respondents have very low confidence while using e-commerce. One of the reasons for such a situation is the fear of possible abuses or the fear that e-commerce is insecure. Therefore, in order to increase e-commerce in Serbia, one of the priorities should be work on increasing the security of participants in e-commerce to reduce the possible abuses. From the research a conclusion can be drawn that the level of education significantly affects the use of e-commerce in Serbia and that it should be constantly worked on raising the educational level of the citizens in order for them to be able to properly use the advantages that e-commerce offers.

**Keywords:** E-commerce, educational level, customer satisfaction, e-commerce security

## 1. Introduction

In modern business conditions, the needs of the companies for information technology and commerce based on it (electronic commerce) are becoming more pronounced. Electronic commerce (e-commerce) involves all activities of buying and

selling products and services which are carried out via the Internet or through other electronic communication channels. First of all, e-commerce consists of distributing, buying, selling, marketing and maintaining the products and services over electronic systems such as the Internet.

The level of use of information technology and computers depends on the level of education of the users. Educated people need sophisticated information about products and strive to use multiple sources of information when making purchase decisions.

The paper points out the significance of education as an element of culture in fostering the spread of e-commerce among the citizens of the Republic of Serbia.

This paper's subject is to examine to which extent and in which way the educational level affects the customer's use of e-commerce in the Republic of Serbia. This issue is very important considering the significance of e-commerce in the contemporary business environment. In accordance with the defined subject of research, *the main objective of this paper is to determine the level of customer use of e-commerce depending on the level of education in the Republic of Serbia. Also, the objective of this study is to spot the areas that need to be improved in order to increase the level of e-commerce usage in the Republic of Serbia.*

In the period of constant growth of market and competition, understanding and meeting the needs of e-commerce customers has become an imperative. Dedication and attention to the customer as an individual lead to getting to know the customer and to creating deeper business relations which are important for further cooperation, as well as for mutual satisfaction in business.

In accordance to the subject of research and the goals set, the paper starts from the following hypotheses:

#### *Hypothesis 1:*

There is a statistically significant difference between groups with different level of education in using e-commerce.

#### *Hypothesis 2:*

E-commerce security has a direct impact on customer satisfaction and use of e-commerce.

#### *Hypothesis 3:*

There is a statistically significant difference between groups with different levels of education regarding safety and satisfaction with the use of e-commerce.

## **2. Review of Theoretical Literature**

Electronic commerce is a very broad term. It can be most simply defined as buying and selling of goods

and services that is based on the use of information and communication technologies (Bjelić, 2012: 84). E-commerce includes all activities of buying and selling products and services which are carried out via the Internet or other electronic communication channels. First of all, e-commerce consists of distributing, buying, selling, marketing and maintaining products and services over electronic systems such as the Internet (Todorović, Lečić-Cvetković, 2006: 17).

The development of the Internet and e-commerce changes to focused marketing, the customers are active participants of advertising campaigns and are approached individually, all with an aim to increase the satisfaction level, to reduce product delivery time and the number of complaints, to improve customer support and to achieve savings in distribution costs.

Depending on the telecommunication base on which the electronic commerce is being realised, it can be identified as follows (Simović, 2013: 19):

- Internet electronic commerce,
- Non-Internet electronic commerce (use of private networks, such as the VAN network, furthermore through the LAN network or the use of the Intranet, respectively through creating the extranet with partner companies).

E-commerce is the only branch of industry which has marked a constant growth in the EU in the last ten years. The total e-commerce in Europe has increased by 18% in 2013 in comparison to 2012 and it amounted to 155 billion euro. In 2014 a growth of 18% was also achieved and thus the profit of 181 billion euro by 2015. E-commerce is particularly present in Great Britain (67%) and France (52%), where 67%, respectively 52% of the total population on the network has made an online purchase.

In the study "Global Retail E-commerce Index 2015", conducted by the consulting firm A. T. Kearny from Chicago, it is stated that Serbia occupies the last position since it does not have a prepared plan on country level for further development of e-commerce.<sup>1</sup>

For ranking the countries this study used as criteria: market size, customer behavior, potential for growth and market infrastructure.

E-commerce is the only branch of industry in Serbia that has marked a growth in all previous years. One of the main characteristics of e-commerce in Ser-

bia, but also in the region, is that the citizens mainly make decisions to purchase on foreign websites. The share of purchases on foreign sites in relation to domestic ones is 90 versus 10 percent.<sup>2</sup>

Despite the growth, there are significant obstacles for further expansion of online commerce in Serbia. One of the greatest obstacles is the fact that Serbia as a country still does not have a prepared plan for further development of e-commerce.

Even though there is the Strategy on Development of Electronic Communications in the Republic of Serbia for the period 2010-2020 and the Information Society Development Strategy for the period 2010-2020, as well as the laws in this field (Electronic Signature Law, Law on E-documents, Telecommunications Law, Law on Electronic Commerce, Law on Personal Data Protection) (Tomić-Petrović, Petrović, 2011: 70), implementation of various aspects of the use of information and communication technologies is still insufficiently present, in particular the sociocultural perspective which can often have a decisive influence on the pace of expansion of ICT usage. When it comes to development of e-commerce in Serbia, it seems to be especially important to understand cultural peculiarities of the country and to consider them as reasons for the outgoing failure of the development of this concept of commerce.

Social factors that negatively affect the development of e-commerce in Serbia could be divided into (Petrović, Kovačević, 2012: 72):

- indirect – factors which generally have impact on the use of the Internet as a necessary tool for the development of e-commerce, and
- direct – cultural and psychological patterns of behavior which influence the acceptance of e-commerce among the existing Internet users.

When speaking about indirect factors, the first and foremost factor of low penetration of Internet users is the extremely bad economic situation in Serbia (almost 88% of households with income of over 600 euro in Serbia have an Internet connection compared to less than 48% of households with income lower than 300 euro).

However, despite the bad economic situation, we should nevertheless pay attention to socio-demographic factors which are not a good basis for e-commerce development. When it comes to the structure of Internet users in Serbia as a factor for the develop-

ment of e-commerce, we can draw a conclusion that it is unfavorable from the viewpoint of the age structure, given that the dominant users are the young people, many of whom still do not possess their own or significant financial resources. As a reason for insufficient use of electronic commerce, cultural patterns of behavior and socio-psychological characteristics of Serbian citizens have been identified. One of the direct factors is the lack of any kind of motivation for using the Internet since there is no awareness of the way in which the usage of the Internet could improve life and make it easier.

Evidence suggests that, the principal reasons why people do not purchase via the Internet are related to online security and policy, reliabilities of companies and website technology (Chen, Barnes, 2007). The role of trust could be even more important in an E-commerce setting, since e-customers do not deal directly with the company, or its staff. A high degree of trust not only stimulates and meets consumers' high expectations of satisfying transactions but also eliminate uncertainty, perceived risks and interdependences in most online transactions (McKnight, Chervany, 2001). In addition, according to Gefen and Straube (2004), with increasing the level of consumers' trust, we will have an increase in the degree of purchase intentions of consumers and it will be easier for companies to retain customers. Moreover, Pavlou, Gefen and Straub (2004) believe that online trust plays a key role in creating satisfied and expected outcomes in online transactions. Also, the quality elements of the e-service are expected to affect e-trust directly, because they represent that trust cues convey the trustworthiness of the site and system with customers.

The success or failure of an e-commerce business depends on security and privacy (Tripathy, Mishra, 2013). Users' trust is essential to business development (Rane, Meshram, 2012). With the popularization of electronic payment, security issues have become a key problem. Theft of personal data (privacy) and unauthorized access (security) are serious issues in e-commerce for customers and service providers alike. Privacy is the ability of an individual to control the terms under which their personal information is acquired and used (Culnan, 2000).

Thus, to improve their business situation, providers should be specific about their security strategies. Security is also a major issue for e-commerce sites and consumers alike (Srikanth, 2012).

In the last few years, many researchers have offered solutions to the security and privacy issues that are loopholes in e-commerce transactions. E-commerce includes the transmission and exchange of information, products, and services, online transactions and payment, and also resource sharing between enterprises. In the effort to make electronic transactions secure, there are many problems to be solved beyond privacy and security. However, organizational policies and electronic signature technology may play as important a role in security and privacy as any other solution (Sadha et al., 2016).

The loss of trust is being fuelled by continued stories of hacker attacks on e-commerce sites and consumer data privacy abuse (Marchany, Tront, 2015). Because of that the security of e-commerce has become a hindrance to the improvement in the environment for the development of e-commerce. The common various e-commerce security tools are as follows (Partikana et al., 2015):

1. Firewalls - Software and Hardware
2. Public Key infrastructure
3. Encryption software
4. Digital certificates
5. Digital signatures
6. Biometrics
7. Passwords
8. Locks and bars - network operations centres.

In the services industry and particularly in services which are based on electronic devices a new paradigm seems to be emerging: the conscious management of identity in a secure service context (Jotwani, Dutta, 2016). The security needs a kind of trust security. Such a security allows the user to define a secure domain; to deal with the user's individual background so that the management of the user's device base is both secure and easy; to define which of his devices can be publicly or restrictedly accessed and how interactions occur. A secure client in combination with a trusted component in a mobile device can serve as a security anchor in the overall Security of Service concept.

Some authors believe that the conflict between convenience and ease-of-use vs. security has always been resolved in favor of convenience (Marchany, Tront, 2002). Other authors (Amtul, 2015) believe

that there are tools such as biometrics which can summarize both:

1. Greater security - biometrics link a person to an action,
2. Convenience - clients have no identification number or password to remember.

Thus, to improve their business situation, providers should be specific about their security strategies. Security is also a major issue for e-commerce sites and consumers alike.

As new security solutions are developed, it is important that e-commerce vendors do not forget to also inform their customers about how these new solutions work. For example, it may not be obvious for customers that today sensitive information is encrypted when sent over the Internet, to ensure reliability and privacy.

Customer satisfaction is a collective outcome of perception, evaluation and psychological reactions to the consumption experience with a product or service.

According to Kottler and Keller (2006: 144) - satisfaction is a person's feelings of pleasure or disappointment which resulted from comparing a product's perceived performance or outcome against his or her expectations. Perception is defined as the consumer's belief, concerning the service received or experienced (Rai, 2008). Yang Fang (2004) believes that online customers still demand many services available through traditional channels even if they choose pure Internet-based suppliers with basic customer services. Although expectations seem to be of lesser importance as a comparison standard in e-commerce (Zeithaml et al., 2000), customers appear to use experience-based norms (Cadotte et al., 1987) and traditional services as comparison standards for e-services. This paper only partially analyzed customer satisfaction with e-commerce in Serbia and mainly focused on the use of e-commerce.

The reasons for the low level of e-commerce in Serbia can be traced to cultural factors, first of all in the widespread sense of distrust that arises as a consequence of fear from possible fraud in this type of commerce. This fear is the result of various factors, whereby the following stand out (Petrović, Kovačević, 2012: 74):

1. Lack of trust in state institutions which should be a guarantor of reliability and fairness;

2. Low level of trust is also deeply rooted in the patterns of social behavior of the citizens of Serbia;
3. Distrust is being developed as a natural defence mechanism against risks to which people are exposed in their everyday life.

While the latter reason could be categorized as universal, the first two reasons represent the peculiarity of Serbian society.

As evidence of the universality of trust, different studies have shown trust to be a universal factor. One international research (2011) examines consumers concerns about online shopping safety and shows that: almost 20% of consumers still do not shop online because of security concerns; almost 30% of consumers shop online but worry, and 22% of consumers shop only on well-known sites<sup>3</sup>. On the other hand, one Serbian research examines why consumers have not tried Internet shopping. The research results show that 43% of consumers want to see the product before buying, 26% do not trust the guarantee that the product delivers, 20% do not believe in the system of payment, 19% prefer the traditional method, and 17% are afraid that the delivery will be unreliable<sup>4</sup>.

Level of education has a great impact on customer behavior. Educated people need more sophisticated information on the products and they strive to use multiple sources of information when making purchase decisions. According to the level of education (data of the Statistical Office of the Republic of Serbia for 2014) regarding the use of computers, persons with higher education are dominant. The share of computer users (within the last 3 months) according to the level of education is as follows:<sup>5</sup>

- 88.8% of persons with higher education;
- 72.4% of persons with secondary education;
- 31.7% of persons with education lower than secondary education.

Empirical evidence suggests that customer education enhances perceived control, perception of trust with the service provider and satisfaction with the firm. Customer education also contributes to the management of expectation and trust. Trust has been acknowledged as an important factor in customer loyalty. It will bring positive outcomes which are generated from customer knowledge about product/services performance. Therefore, customer

education will positively impact customer trust, loyalty and outcomes (Suh et al., 2015).

The aim of this study is to examine, on a random sample, the effect of direct factors (education, trust) on the level of use and only partially on satisfaction with e-commerce in the Republic of Serbia.

### 3. Research Methodology

For the purposes of classification and grouping of data during the research, all collected data have been processed in the statistical software "SPSS" (Statistical Package for the Social Sciences). During data processing, descriptive and parametric analyses were used, as well as comparison of mean values, correlation and regression.

Survey and online survey method were used in the research. Therefore, in addition to personal survey by means of a questionnaire, an online survey was conducted through a "Google" questionnaire.

### 4. Research Results

The survey for the purposes of this paper was conducted in the period 4–7 August 2015. The technique for sampling was a simple random sample. The number of respondents who took part in the survey is 105.

The questionnaire itself consists of 36 statements for which the respondents were supposed to express the degree of their agreement (or disagreement) on a seven-point Likert scale, where grade 1 meant "entirely disagree" while grade 7 meant "entirely agree". In addition to the mentioned 36 statements, the questionnaire also includes 6 demographic questions, namely: gender, age, employment status, education, income on a monthly basis, and the type of settlement in which the respondent lives.

The gender structure of the respondents is as follows: 46% male and 54% female respondents. When speaking about age structure, most of the respondents are aged 26 to 33 years (41%), followed by the respondents who are 18 to 25 years old (27%) and respondents aged 34 to 41 years (22%).

Regarding the employment status of the respondents, employed persons are dominant since half of the respondents belong to this group, i.e. 50%, followed by 30% who identify themselves as "pupils/students", 18% who are unemployed and the retired people who only have a share of 2%.

Most of the respondents in the sample have a bachelor's / master's / doctoral degree (45%), when it comes to segmentation on the basis of educational level or the last completed school.

Then a group of respondents follows who have completed secondary school (31%), while 18% have not completed post-secondary school education. The lowest number of the respondents has only primary school education (6%).

A higher percentage of the respondents live in towns (70%), while 30% of the total number of respondents live in rural areas.

Through descriptive analysis, average values were calculated of the scores that respondents gave at the seven-point Likert scale and thus expressed the degree of their agreement or disagreement. Standard deviation is also presented for each statement in particular (Table 1).

*Table 1 Descriptive analysis of the results – arithmetic mean and standard deviation*

Statements	Number of respondents	Arithmetic mean	Standard deviation
1. I actively use a computer.	105	4.48	1.99
2. I believe that my computer usage is at the advanced level.	105	3.99	1.68
3. I use a computer mainly for business purposes.	105	3.29	1.96
4. I use computer mainly for private purposes.	105	4.06	2.01
5. My home computer has an Internet connection.	105	4.85	2.06
6. I often use the Internet.	105	4.81	1.92
7. I believe that my Internet skills are at the advanced level.	105	4.34	1.99
8. I use the Internet mainly for private purposes.	105	4.21	1.89
9. I use the Internet mainly for business purposes.	105	3.41	2.08
10. I often use social networks.	105	4.30	1.86
11. I believe that the use of social networks contributes to communication between people.	105	4.53	<b>2.20</b>
12. I believe that nowadays it is desirable to have an account on social networks.	105	4.27	1.89
13. I believe that the use of social networks is safe.	105	<u>3.20</u>	2.06
14. I prefer reading online newspapers to printed editions.	105	4.04	1.89
15. I consider online newspapers more current than the printed ones and therefore also better.	105	3.84	1.96
16. I use a "smart" phone (new generation mobile phone).	105	4.77	1.68
17. „Smart“ phones are far better than ordinary mobile phones.	105	4.80	<b>1.61</b>
18. „Smart“ phone applications make the use of mobile phones a lot easier.	105	<b>4.86</b>	1.93
19. I often use mobile phone applications such as Viber and WhatsApp.	105	4.68	1.84
20. I prefer using debit cards to cash.	105	2.72	1.94
21. I believe that the use of debit cards is safe.	105	<u>3.46</u>	1.68
22. I often use e-commerce.	105	<b>2.81</b>	1.90
23. I use e-commerce mainly for business purposes.	105	<b>2.45</b>	1.85
24. I use e-commerce mainly for private purposes.	105	<b>3.02</b>	1.79

Statements	Number of respondents	Arithmetic mean	Standard deviation
25. I use e-commerce mainly for banking operations.	105	2.58	1.90
26. When choosing a bank it is important for me to have online (via computer) access to my account.	105	3.09	1.76
27. I often do online shopping on the Internet.	105	2.93	1.99
28. It is not a problem for me to leave, when required, the number of my account and my debit card in order to make a purchase on the Internet.	105	2.60	1.65
29. I trust foreign websites for commerce more than domestic ones.	105	3.02	1.88
30. An obstacle to the use of e-commerce is the fear that I am not entirely familiar with the whole procedure of e-commerce.	105	3.01	1.84
31. I believe that e-commerce is safe.	105	<u>3.41</u>	1.91
32. Electronic commerce makes business easier.	105	4.18	1.91
33. I am satisfied with the functioning of e-commerce in Serbia.	105	3.08	1.99
34. I believe that an insufficient number of people in Serbia take advantage of e-commerce.	105	4.09	1.84
35. I believe that a small number of enterprises in Serbia take advantage of e-commerce.	105	4.00	1.91
36. I recommend to my friends to take advantage of e-commerce.	105	3.90	2.06

Source: Authors' research

In addition to the statements which examine to what extent the respondents use e-commerce and their attitudes towards e-commerce, they were also requested to estimate the level of their agreement with statements which referred to other contemporary technological advances, such as the Internet and computers (which are necessary for the performance of electronic commerce), "smart" phones, reading of online portals, debit cards. These statements have been added in order to compare whether there is a difference in the use of these technological advances in relation to the use of e-commerce.

The statement with the highest average score is the statement "Smart phone applications make the use of mobile phones a lot easier" (4.86), while the lowest rating belongs to the statement "I use e-commerce mainly for business purposes" (2.45).

The respondents expressed a higher level of agreement, in comparison to other statements, when they were asked whether they use a computer, the Internet and "smart" phones. On the other hand, the

statements on e-commerce and use of debit cards resulted in lower ratings.

A higher level of agreement was also expressed in the statements which referred to the use of computers and the Internet mainly for private purposes, rather than for business. The same appears also in the case of the use of e-commerce, given that the statement "I use e-commerce mainly for private purposes" received a higher grade (3.02) than the statement "I use e-commerce mainly for business purposes" (2.45).

Apart from the fact that the statements referring to the safety of the use of social networks, debit cards and e-commerce received similar grades (3.20, 3.46 and 3.41 respectively), the respondents still use social networks more often than debit cards and e-commerce.

The requirements for application of the parametric test (sample of more than 30 respondents, following a normal schedule) were met. The "ANOVA" test and "t" parametric test have been applied.

The following tables show segments and statements which were subject of this paper's research.



**Table 2 Parametric analysis of the results – differences between various groups segmented according to their education**

Statements	Educational level	Arithmetic mean	Difference in arithmetic means	Significance
2. I believe that my computer usage is at the advanced level.	Primary school	2.17	-2.41	<b>0.02*</b>
	Post-secondary school	<b>4.58</b>		
2. I believe that my computer usage is at the advanced level.	Primary school	2.17	-2.47	<b>0.01*</b>
	Bachelor's degree and higher	<b>4.64</b>		
7. I believe that my Internet skills are at the advanced level.	Primary school	1.83	-3.29	<b>0.00*</b>
	Bachelor's degree and higher	<b>5.13</b>		
7. I believe that my Internet skills are at the advanced level.	Secondary school	3.33	-1.80	<b>0.00*</b>
	Bachelor's degree and higher	<b>5.13</b>		
22. I often use e-commerce.	Primary school	1.33	-2.46	<b>0.01*</b>
	Post-secondary school	<b>3.79</b>		
22. I often use e-commerce.	Secondary school	2.21	-1.58	<b>0.01*</b>
	Post-secondary school	<b>3.79</b>		
23. I use e-commerce mainly for business purposes.	Secondary school	1.79	-1.06	<b>0.03*</b>
	Bachelor's degree and higher	<b>2.85</b>		
26. When choosing a bank it is important for me to have on-line (via computer) access to my account.	Primary school	1.15	-2.60	<b>0.01*</b>
	Bachelor's degree and higher	<b>3.60</b>		
26. When choosing a bank it is important for me to have on-line (via computer) access to my account.	Secondary school	2.45	-1.14	<b>0.04*</b>
	Bachelor's degree and higher	<b>3.60</b>		
34. I believe that an insufficient number of people in Serbia take advantage of e-commerce.	Primary school	2.50	-2.55	<b>0.01*</b>
	Post-secondary school	<b>5.05</b>		
34. I believe that an insufficient number of people in Serbia take advantage of e-commerce.	Secondary school	3.45	-1.60	<b>0.05*</b>
	Post-secondary school	<b>5.05</b>		
35. I believe that a small number of enterprises in Serbia take advantage of e-commerce.	Primary school	2.33	-1.90	<b>0.03*</b>
	Bachelor's degree and higher	<b>4.23</b>		
35. I believe that a small number of enterprises in Serbia take advantage of e-commerce.	Secondary school	3.42	-1.52	<b>0.01*</b>
	Post-secondary school	<b>4.95</b>		

Source: Authors' research

Remark: Level of significance at  $p < 0.05$

Based on the results of the conducted “ANOVA” test (Table 2), it is to conclude that there is a statistically significant difference among the answers of particular segments of the respondents when segmentation is applied based on the level of their education, regarding the statements which refer to the use of e-commerce.

Those respondents who belong to the segments with higher levels of education have awarded all the given statements with higher scores. The respondents who have completed post-secondary school use e-commerce more often than the respondents who have completed primary or secondary school. Related to that, persons who have obtained a bachelor’s / master’s / doctoral degree use e-commerce for business purposes more often than those who have completed secondary school.

When choosing a bank, persons with a bachelor’s / master’s / doctoral degree appreciate more the ability to access their account electronically, via personal computer (3.60), compared to the persons with primary school education (1.15), as well as to those with completed secondary school (2.45).

On the basis of the statements given in the table, it can be noticed that there is a statistically significant difference in the statements which refer to safety and satisfaction with the use of e-commerce.

Also, based on “ANOVA” parametric analysis of the results, the differences between various groups seg-

mented according to their employment status have been noticed in case of 7 statements.

The results of the applied “t-test”, for the segmentation according to the type of settlement in which the respondents live (town; rural area) show that a statistically significant difference exists in the case of 14 statements. Respondents living in towns have expressed a greater level of agreement with all statements for which there is a difference, except for one statement. People living in villages show a higher level of agreement with the statement that nowadays it is favorable to have an account on social networks. In terms of segmentation according to gender, there is a statistically significant difference between only 4 statements, whereby it is noteworthy that women gave higher assessment to the safety of the use of e-commerce.

4.1 Correlation analysis

For the purposes of correlation analysis the following statements have been selected:

- I often use e-commerce;
- I often do online shopping on the Internet;
- I believe that e-commerce is safe;
- I am satisfied with functioning of e-commerce in Serbia.

Table 3 Correlation analysis for specified statements

Statements	1	2	3	4
I often use e-commerce	1	0.70**	0.48**	0.49**
I often do online shopping on the Internet	0.70**	1	0.45**	0.55**
I believe that e-commerce is safe	0.49**	0.45**	1	0.57*
I am satisfied with the functioning of e-commerce in Serbia	0.49**	0.55**	0.57**	1

Source: Authors’ calculation

Remark: Level of significance at  $p < 0.01$

The results of the correlation analysis for the specified statements are presented in Table 3. A statistically significant correlation was determined among all surveyed statements (all correlation coefficients are significant at the level 0.01).

The strongest correlation was noticed between the statements “I often use e-commerce” and “I often do online shopping on the Internet”. The correlation

coefficient between these two statements is 0.70, so it can be considered that there is a strong positive relationship between these two variables.

Among other observed statements there is a moderate positive correlation among frequency, safety and satisfaction with the use of e-commerce, which proves a moderate connection between trust, customer satisfaction and use of e-commerce.

#### 4.2 Regression analysis

As part of this research a simple regression analysis was used in order to determine whether independent variables "I actively use computer", "My home computer has an Internet connection", "I use a smart phone (new generation mobile phone)", "I prefer using debit cards to cash", "I often do online shopping

on the Internet" and "I believe that e-commerce is safe" have an influence on the dependent variable "respondents' satisfaction with e-commerce" which arose as the unweighted arithmetic mean of two statements, namely: "I am satisfied with the functioning of e-commerce in Serbia" and "I recommend to my friends to take advantage of e-commerce".

**Table 4 Regression analysis – impact of the selected independent variables on respondents' satisfaction with e-commerce in Serbia**

Variables	R <sup>2</sup>	F	B	T
<b>I actively use a computer</b>	<b>0.18</b>	23.01	0.43	4.80*
<b>My home computer has an Internet connection</b>	<b>0.12</b>	14.16	0.35	3.76*
<b>I use a "smart" phone</b>	<b>0.16</b>	19.64	0.40	4.43*
<b>I prefer using debit cards to cash</b>	<b>0.24</b>	33.20	0.49	5.76*
<b>I often do online shopping on the Internet</b>	<b>0.32</b>	49.21	0.57	7.01*
<b>I believe that e-commerce is safe</b>	<b>0.43</b>	78.63	0.66	8.87*

Source: Authors' calculation

Remark: Level of significance at  $p < 0.01$

Satisfaction of the respondents with e-commerce in Serbia was described with 18.3% through the statement "I actively use a computer", with 12.1% it was expressed through the statement "I use a smart phone", with 24.4% through the statement "I prefer using debit cards to cash", with 32.3% it was described through the statement "I often do online shopping on the Internet" and with 43.4% it was expressed with the statement "I believe that e-commerce is safe". Since it comes to the separate influence of each statement, it can be concluded that each of them has an impact on satisfaction with e-commerce. However, the strongest influence belongs to the statement referring to the opinion of the respondents on the safety of e-commerce. Based on Beta values we can see that all independent variables have a moderately strong influence on the dependent variable. The results of the parametric analysis show no existence of statistically significant differences among groups with different levels of education in terms of the statements about safety and satisfaction with the use of e-commerce.

#### 5. Discussion

The significance of the conducted research and its results are reflected in recommendations for in-

creased use of e-commerce which do not refer to Serbia exclusively, but may also be useful for other countries of similar socioeconomic and demographic environment.

After all conducted tests and on the basis of the results of those tests, we can draw a conclusion that the respondents generally use e-commerce in Serbia on a very small scale. According to the data and the results of the descriptive analysis, it is to notice that all other technological achievements of modern age have been accepted by the respondents to a greater extent than e-commerce.

The respondents have very low confidence in e-commerce when they are supposed to leave the data such as the number of their account and debit card, in order to purchase on the Internet. When we consider that, in addition to this, the correlation analysis revealed a correlation and the regression analysis discovered a very strong influence on satisfaction of the statement "I believe that e-commerce is safe", it can be concluded that the potential problem for such a situation is fear of possible abuses or fear of unsafety of e-commerce.

Based on these conclusions, and with an aim of increasing e-commerce in Serbia, efforts should be made to increase the safety of the participants in e-

commerce and to reduce possible abuses. Of course, simultaneously, an effort should be put into education of people, in order to enable them to properly take advantage of what e-commerce has to offer, which is also indicated by the results of the parametric analysis.

The educational system in Serbia should be adapted in such a way that people who have completed primary school would also be capable of using computers and taking advantage of everything that this has to offer. Moreover, the educational system, but also government and society in general, should enable the rural population to educate themselves in this field since they are using modern technologies far less than the urban population. Furthermore, attention should also be given to the education of older generations with an aim of faster and easier adoption of new technologies.

## 6. Conclusion

Regarding the hypotheses that have been set, the following conclusions can be drawn:

**The first hypothesis is proven correct.** Educational level influences the use of e-commerce. Based on the results of the conducted "ANOVA" test, it can be concluded that there is a statistically significant difference between the answers of different segments of respondents when the segmentation is done by the criterion of educational level. The respondents with higher level of education use e-commerce more often than people with lower educational level, particularly for business purposes.

Based on regression analysis it is found that safety has a statistically significant influence on customer satisfaction and use of e-commerce in Serbia. Thus, **the second hypothesis is proven correct.** The analysis showed that the statements "I actively use a computer", "My home computer has an Internet

connection", "I use a smart phone", "I prefer using debit cards to cash", "I often do online shopping on the Internet" have an impact on satisfaction with e-commerce, but the strongest impact belongs to the statement associated with the opinion of the respondents on whether e-commerce is safe.

The parametric analysis did not state any statistically significant difference between groups of different levels of education, regarding the statements about safety and satisfaction with the use of e-commerce, which **does not prove the third hypothesis.**

The scientific contribution of this paper is in enrichment of the existing literature and studies in the field of the use of electronic commerce. Although e-commerce is in expansion worldwide, in Serbia there are still not enough research papers which deal with the reasons for its insufficient use and with the level of satisfaction with e-commerce.

The social objective of this paper is to foster the development of e-commerce on the market in Serbia, providing adequate information and new knowledge to the users of e-commerce services, as well as raising awareness of the necessity of using these services in contemporary commerce and business.

The limitations of this study include the relatively small sample and the fact that the majority of the respondents are from Kragujevac and Raška, which does not provide a representative sample for the whole country.

This paper can serve as the basis for further research in this field, especially in the direction of studying the role of the state and educational system in increasing the safety of e-commerce and in raising awareness about the advantages of e-commerce, to increase its use. Furthermore, in addition to the direct factors, one of the directions of future research could be examining the impact of indirect factors on the use of e-commerce.

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## **TESTIRANJE STAVOVA PREMA KORIŠTENJU ELEKTRONIČKE TRGOVINE OVISNO O RAZINI OBRAZOVANJA KORISNIKA: PRIMJER REPUBLIKE SRBIJE**

### **SAŽETAK**

Predmet je ovoga rada ispitivanje u kojoj mjeri i na koji način razina obrazovanja utječe na korištenje elektroničke trgovine u Republici Srbiji i djelomično na zadovoljstvo korisnika elektroničke trgovine. Osnovni je cilj ovoga rada utvrditi stupanj korištenja elektroničke trgovine ovisno o razini obrazovanja, kao i uočavanje područja koja je neophodno unaprijediti i poboljšati radi povećanja zadovoljstva korisnika elektroničke trgovine u Republici Srbiji. U radu je za potrebe usustavljanja i grupiranja podataka korištena i statistička metoda. Svi su prikupljeni podatci obrađeni u statističkom softveru "SPSS-u" (korištene su deskriptivna i parametarska analiza, kao i usporedba srednjih vrijednosti, korelacija i regresija). Na temelju rezultata provedenih testova zaključak je da ispitanici elektroničku trgovinu u Srbiji koriste u vrlo malim razmjerima, kao i da su druga tehnološka dostignuća prihvatili u značajnijoj mjeri u odnosu na elektroničku trgovinu. Ispitanici imaju vrlo malo povjerenja prilikom elektroničke trgovine. Jedan od uzroka za ovakvu situaciju je strah od mogućih zloupotreba, odnosno strah ispitanika da je elektronička trgovina nesigurna. Zbog toga, u cilju povećanja elektroničke trgovine u Srbiji, kao jedan od prioriteta treba biti povećanje sigurnosti sudionika u elektroničkoj trgovini kako bi se smanjile moguće zlouporabe. Iz istraživanja se može izvesti zaključak da razina obrazovanja u velikoj mjeri utječe na uporabu elektroničke trgovine u Srbiji i da bi trebalo kontinuirano raditi na podizanju razine obrazovanja i edukacije građana kako bi znali na pravi način koristiti prednosti koje elektronička trgovina pruža.

**Ključne riječi:** elektronička trgovina, obrazovanje, zadovoljstvo korisnika, sigurnost e-trgovine