The Influence of Online Shopping Determinants on Customer Satisfaction in the Serbian Market

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Abstract

Consumer satisfaction with online shopping is directly dependent on a number of factors. There is a constant dilemma in the market related to the question which online shopping determinants affect the customer satisfaction. This issue is particularly important for underdeveloped markets, where online commerce is not sufficiently present. In order to increase the online commerce participation, it is necessary to explore and analyze the connection between customer satisfaction and diverse determinants. Accordingly, this paper develops the research model to determine the impact of certain online purchase determinants on the consumer satisfaction in the market of Serbia. A conceptual model is defined, consisting of 26 items categorized into seven variables: security, information availability, shipping, quality, pricing, time, and customer satisfaction. Input model parameters were collected through surveys, with the aid of appropriate Internet tools. The validity of the developed model was verified through the Confirmatory Factor Analysis and the Partial Least Squares. The obtained result analysis confirmed the basic research hypotheses that customer satisfaction in online shopping, on the Serbian market, directly depends on the following determinants: security, information availability, shipping, quality, pricing and time.

Keywords: Online shopping, Customer satisfaction, Security, Information availability, Shipping, Quality, Pricing, Time

1   Introduction

In the last decade, online shopping has experienced an explosive growth due to the fact that it represents a more economic and convenient approach to purchasing in comparison to traditional shopping. Nevertheless, in the beginning, the transition from one to another, more modern purchase method, created a sense of concern among customers with respect to the following: leak of personal information, online fraud, inconsistency between the ordered product quality and the desired quality, unsuccessful shipping, etc. Today, these concerns are at a much lower level, as people recognized the advantages offered by online shopping. There are a number of reasons why people purchase via the Internet; for example, consumers can buy anything at any time without actually going to the store; consumers can stumble on the same product at a lower price by comparing different websites simultaneously; consumers want to avoid pressure felt when communicating face-to-face with the retailer; consumers want to avoid traffic jams that can occur on the way to the store, and so on. Online shopping provides consumers with more information and opportunities to compare products and prices, with greater product selection, with convenience and ease of finding desired products online [9]. It has been argued that online commerce offers more satisfaction to modern consumers who seek convenience and speed [103]. In online communication, when a consumer sees a banner ad or online promotion, it can attract their attention and stimulate their interest for these specific products from advertisements. Before deciding for purchase, the customer may seek additional information for help. If there is not enough information, they will browse for them through online channels, e.g. using online catalogs, websites or search engines [59].

Retaining the online consumers has attracted a lot of attention, since it serves as a means of gaining competitive advantage [96]. When the consumers are satisfied with a particular online retail shop, they will purchase there more [52]. Hence, both concepts, retaining and satisfying the customer, are becoming increasingly important for both online and offline business. It is therefore important to understand the factors that drive customer satisfaction and their choice of online stores [23]. The purchasing process consists of the following steps: problem/need recognition, information search, evaluation of alternatives, purchase decision and post-buying behavior [57]. Customer satisfaction is the result of consumer experience throughout the different stages of purchase. Since the experience of online consumers, due to the inability of physical contact with the product, is solely based on information offered by online stores [69], it is clear that the information provided can affect consumer satisfaction, both in the information search stage and during the purchase decision phase.

This paper deals with the analysis of customer satisfaction, with the aim of utilizing the empirical research on the Serbian market in order to determine the connection between customer satisfaction and certain determinants of online shopping. In addition to introduction and conclusion, the paper contains three more sections. Section Two presents the basic problem and defines research hypotheses. Section Three presents the developed methodology and research model, while the obtained research results can be reviewed in Section Four.

2   Problem Description

In EU, during 2015, 76% of population aged 16 to 74 used the Internet almost every day, and nearly 53% of them purchased online [30]. The total turnover from B2C e-commerce around the world in the year 2015 was estimated at 1.943 billion Euros, marking the increase of 24% compared to 2014, mainly due to the increased exchange in the Asia-Pacific region. Three main markets of e-commerce comprise China, the United States and Great Britain, accounting together for 61% of the total B2C sales in the world [28]. Out of the total population of Europe, which is 818 million people, 564 million of them use the Internet, while 331 million use online shopping [28]. The total turnover from B2C e-commerce in Europe in 2015 amounted to 424 billion Euros, an increase of 14% in comparison to 2014. The main e-commerce markets in Europe remain Great Britain, Germany and France. With 33% of online shoppers, Serbia still lags behind the EU average of 50%. However, an encouraging fact is that the percentage is higher than the percentage of online buyers of individual EU countries, such as Greece, Lithuania, Croatia, Italy and others [30], [91]. Although the global financial crisis began in 2008, it did not have any negative impact on the spread of e-commerce [47]. Moreover, while the rate of the development of e-commerce in EU during the crisis years was high, it stagnated in Serbia. Young Serbian consumers, which are more educated and with higher income, are more likely to use online shopping [66]. Almost half of the Serbian online customers purchase clothes, shoes and jewelry, while about a third of them buy electrical appliances [66], [92].

The most popular method of payment in Serbia is still cash on delivery, which is used by 80% of customers [66]. Only 5% of customers in Serbia use PayPal and the same percentage exploit the benefits of e-banking. This is completely different from the situation in, for example, the United States, where payment cards (credit or debit) are utilized by 78% of online shoppers, with the most popular online payment alternative being PayPal [58]. The same is true for the general statistics of the world [7]. It is expected that this trend will change in Serbia in the near future, considering the new Law on Payment Services and its possibilities. Based on the statistic data of the National Bank of Serbia [75], in 2015, the buyers in Serbia spent more than 110 million Euros from their payment cards for online purchases; three-quarters of the customers spent money on foreign websites, and the other quarter on the domestic websites. Lower price, shipping accuracy and purchase simplicity were found to be very important factors for e-

buyers in Serbia [67]. Online shoppers in Serbia also value the precise description of the products, i.e. the accuracy of information [67]. Information accuracy allows potential shoppers to feel more secure in the sense that they will not receive the product with erroneous characteristics. By providing the right information, a number of potential problems and the returns of products are avoided, online purchases become less risky and easier, and customers are more satisfied.

The stated facts indicate certain basic features of online shopping on the Serbian market. However, the lack of research addressing key dimensions of online purchases on this market is evident. This was the main motivation for this research, aiming at a more detailed analysis of the interdependence between customer satisfaction and the following determinants: security, information availability, shipping, quality, pricing and time. Accordingly, main hypotheses have been defined, as well as the conceptual model, which are presented in more details in continuation.

2.1 Customer Satisfaction

Consumer satisfaction is the result of comparing the expectations and the experience; in other words, the consumer is pleased when the delivery meets or exceeds their expectations [53]. Satisfaction and loyalty are the key elements determining the success of the market concept implementation [53]. Satisfied customers are the ones that will repeat the purchase if the service provider reached or exceeded their expectations [1]. It is significant to identify the variables of consumer satisfaction, since they present the business benchmark and serve as a guide to future improvements [1]. In [36], there are eight determinants identified as important for customer satisfaction; those are the following: web design, security, information quality, payment methods, e-quality of the service, product quality, product range, and service provision. On the other hand, [74] argues the following to be the determinants of consumer satisfaction: consumer interface quality, information quality, perceived quality, and privacy.

2.2 Security

Security is defined as the ability of the website to protect consumers' personal data from any unauthorized disclosure of information during electronic transactions [36]. Security is considered to be an important factor perceived seriously by online purchase consumers [74]. It is due to the fact that the issues of security and privacy play a crucial role in creating trust during online transactions [11]. Since online shopping usually implies payment by debit or credit card, consumers sometimes direct their attention towards the information about the retailer as a means of protection [60]. The willingness of consumers to visit online stores and purchase there is directly related to the consumers' confidence in providing personal information and credit card payments [101]. Consumers tend to buy a product from a vendor whom they trust or a brand product they are familiar with [13]. In online commerce, confidence is one of the most critical issues affecting the success or the failure of Internet retailers [78]. Security tends to be a great problem preventing consumers from purchasing online [59], as consumers are concerned that they will be deceived by vendors who will misuse their personal information, especially their credit card data [19]. For example, a report indicates that 70% of online buyers in the US are seriously concerned regarding the misuse of their personal data and the security of transactions [31]. Security can be divided into two parts: the first relates to data and transaction security, while the second part is directed to the authenticity of consumers [36]. In [11], the attention is focused on the issues of privacy and security. Sixty-one percent of survey participants in [11] would proceed with Internet transactions if their privacy and personal data were to be protected. Therefore, all the above demonstrates the importance of security in online commerce as one of the key factors that consumers take into consideration when deciding to purchase a product online. Hence, websites offering security do have reliable and satisfied consumers. Based on the above, the following research hypothesis has been defined:

H1: Security has a positive effect on customer satisfaction.

2.3 Information Availability

Shoppers expect online retailers to provide all relevant and accurate information about the product [90]. Since online shoppers rarely have the opportunity to touch and feel the products before making a decision on a purchase, online retailers have to provide information regarding that [60]. Consumers appreciate information that will meet their demands [49]. A number of authors believe that the quantity and credibility of information are key elements in ensuring the quality of service in e-shopping. The quantity of information refers to the ability of accessing the adequate information during online shopping (e.g., price comparison), while the credibility refers to the degree of consumers' confidence in information provided by online vendors [45]. Providing appropriate information can help online retailers to dispel concerns and fears of consumers towards a particular product or online shopping [22]. Instead of *byte sounds*, consumers want an access to all information that will enable them to make an informed decision about a product, service or supply [76]. Interactive online tools for product and service comparison are considered to be the essential means of obtaining information that will facilitate the decision-making process about buying online, making consumers more satisfied [32]. In [93], information on the product, in terms of abundance and quality, are identified as components of e-satisfaction. Considering the stated facts, the following hypothesis has been defined:

H2: Information availability has a positive impact on customer satisfaction.

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2.4   Shipping

Shipping is a link in the supply chain that directly affects the consumer and triggers their satisfaction [39]. Shipping presents a key activity in every process, and especially in online shopping [70]. The product delivery service is a prerequisite for customer's satisfaction [97]. It implies that the customer will receive the ordered product, which is well packed, and whose amount, quality and specification are in accordance with the order, as well as the set delivery time and place [77]. The customer expects from the retailer to deliver the promised product in a trustworthy and appropriate manner [89]. The customer believes to be entitled to receive the concrete product in the set time according to promised conditions [18]. In [102], it is emphasized that the delivery service presents the most critical factor in fulfilling the e-customer's expectations and satisfaction. In online shopping, a reliable, safe and timely delivery is the basic and essential goal for online consumers [105]. Consumers are inclined to buy a product from their homes, and thus require a secure, reliable, and fast shipment of the desired product to its destination. In online environment, a timely and reliable delivery plays a key role in meeting consumers' expectations and creating their satisfaction [10]. The delayed delivery can make the customer feel dissatisfied [64]. Timely and reliable product delivery encourages new online sales [1]. The quality of the delivery service influences the confidence in online shopping as well [81]. With a single click, consumers can easily switch from one website to another if they are dissatisfied with delayed and unsecured deliveries. It is therefore essential for the delivery to be realized in accordance with the consumers' requirements. Therefore, the following hypothesis has been determined:

H3– Shipping has a positive impact on customer satisfaction.

2.5   Quality

The quality of products and services in online commerce has a positive impact on customer satisfaction [61]. The perceived product quality is defined as the consumer's judgment about a product's overall excellence or superiority [12]. Keeney [51] indicated that minimizing the product cost and maximizing the product quality are to be regarded as major factors in the success of e-commerce. Patterson [77] pointed out that the perceived product performance is the most powerful determinant related to satisfaction. Conversely, a number of studies dealing with online commerce argue that the service quality has a positive influence on customer satisfaction [38], [55], [88]. The quality of service determines whether the customers will develop strong and loyal relationships with online retailers. Online retailers that offer excellent service quality meet the expectations of their customers and thus improve their satisfaction [53]. In [36], the quality of service is interpreted as the degree of help by online retailers in providing an efficient and effective purchase, shipping and delivery of products and services. By providing and sending information either via formal or informal platforms, online vendors increase the expectations of their customers and add value to their services [16]. Hence, it is very important to manage the quality in business to ensure the best service quality for consumers. Service quality is the ability implying firstly to anticipate, and secondly to meet the requirements by consumers [53]. This is the reason why providing the service quality has an important role in increasing the customer satisfaction. Better website quality significantly influences the consumer's decision to shop online [49]. Based on the above, the following hypothesis has been defined:

H4: Quality has a positive effect on customer satisfaction

2.6   Pricing

Professional literature describes pricing as an important factor in customer satisfaction, due to the fact that consumers always direct their attention to pricing when assessing the product and service value [21], [32], [104]. From the consumer's perspective, price is what is given up or scarified to obtain a product [104]. A number of studies have determined that the pricing is significantly related to customer satisfaction [47]. Pricing directly affects the perception on the transaction's delivered value and usability, and, consequently, customer satisfaction [56]. Negative perception on pricing makes customers feel dissatisfied and disloyal [72]. According to [50], more than half e-customers who changed the retailer have done it due to pricing. Pricing has a special influence onto the satisfaction of the experienced online customers [25], [48]. When the customer is certain about the transaction, their demand for financial benefit increases.

Due to better purchase conditions, consumers use the Internet to buy the same product at a lower price than in the store [85]. Many customers expect online stores to offer their products and services at the lower price in comparison to traditional stores [68]. Discounts while purchasing influence consumers to believe in prices, and ultimately they affect their satisfaction [8]. While shopping online, customers cannot see or test the product; hence, they are not certain that the delivered product is identical to the one on the website. Consequently, price perception has a more significant role [46], [63]. As online stores offer consumers a range of products and services, consumers can compare product prices from different websites and find the products at lower prices than the prices in the stores [60] some websites, such as Ebay, offer consumers an auction or the best deal, thus providing them a good deal for their product. Such approach turns online shopping into a game, transforming it into fun and entertainment [78]. Ultimately, pricing can be the reason for renouncing the product or service or making a sacrifice in order to have the product or service [104]. Considering the above, the following hypothesis is defined:

H5: Pricing has a positive impact on customer satisfaction.

2.7   Time

Saving time is one of the most influential factors in online shopping. Time is the main resource that consumers spend when they purchase online or in traditional stores [5]. Browsing the online catalog during online shopping saves time and reduces stress compared to traditional shopping. According to [84], one of the possible explanations why buying online saves time is eliminating the travel required to go to the store. On the other hand, according to [20], time saving does not present a motivation factor for consumers to buy online, since it takes some time for the delivery of goods. In [73], a factor in time saving was designated as the primary one among those consumers who already experienced e-shopping. In addition, there is a difference between online consumers and offline consumers. Online consumers are concerned with purchase benefits, time saving and choice, while offline consumers are anxious about security, privacy, and delivery on time [35]. According to customer perception, the advantage of online commerce is related to purchase simplicity and the reduction of time spent on shopping [54], [93]. One of the most significant problems people generally deal with concerns the perceived time pressures. According to [87], time pressures present the degree one realizes there is no time left in relation to daily obligations and chores. Since online commerce can be completed anywhere and anytime, this greatly simplifies the lives of its users; by purchasing online, consumers avoid traffic jams, they do not have to search a parking lot, and they do not have to queue nor be a part of the crowd in the store [14], [86].

H6: Time has a positive impact on customer satisfaction.

For the defined hypotheses to be researched and proved in more details, a conceptual model is introduced and depicted in Figure 1.
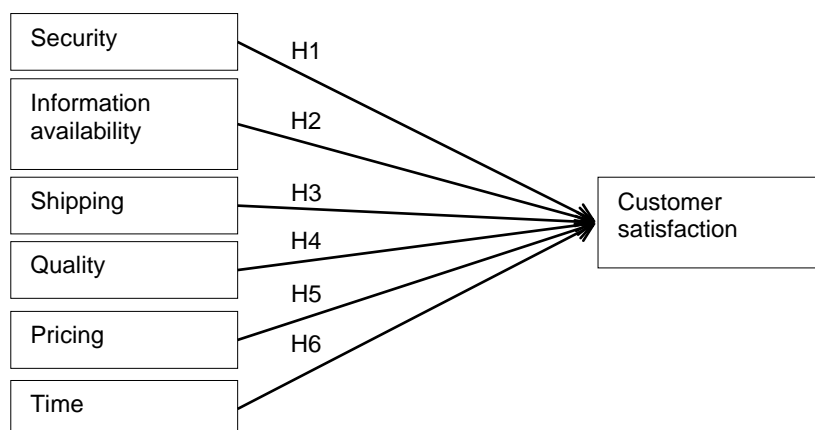

Figure 1: The conceptual model

3   Research Methodology

Research methodology included several steps. The measuring instrument was developed first; then, a representative sample was selected and the survey was conducted; finally, data were analyzed and the model validity was evaluated.

3.1   Development of the Measuring Instrument

The measuring instrument was designed based on already developed instruments and literature overview, as well as according to the results of the studies dealing with the e-business development on the market of Serbia. Following the satisfaction instruments designed in the papers the main measuring instrument variables were defined (Table 1).

The items were designed based on the following studies: E-business development: Study on motivators and barriers for online shopping of e-consumers in Serbia, and, Study on e-consumer incentives and barriers in Serbia. Research within the IPA project E-business development [66], [67]. In accordance with the set objectives, the measuring instrument was designed, comprising the following seven variables: security, information availability, shipping, quality, pricing, time, and customer satisfaction. In the initial phase, the variables enclosed 30 items. The measuring instrument was tested in a pilot research with 30 people who purchased goods over the Internet in the previous year. Their selection was random. Likewise, five experts in online commerce and customer protection on the market of Serbia were surveyed. E-buyers and experts answered questions related to the defined variables and items. After the test, several items were adapted, while four of them were discarded since the participants were not able to understand them correctly. Finally, the adopted measuring instrument had 7 variables and 26 items (Table 2).

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Table 1: Definitions of variables

Variables	Definitions	References
Security	Security is defined as the ability of the website to protect consumers' personal data from any unauthorized disclosure of information during electronic transactions.	[11], [36], [74]
Information availability	Information availability implies that all consumers are to receive identical, reliable, timely and accurate information.	[32], [60], [76], [90]
Shipping	Shipping refers to the delivery of a right product in a right packaging, having an adequate amount and quality, to the set time and set place, with minimum expenses.	[18], [42], [89], [97],
Quality	Quality is defined as the customer's estimation of the overall excellence and value of the delivered product and shipping conditions.	[12], [51], [77]
Pricing	From the consumer's perspective, price is what is delivered or submitted to obtain a product.	[21], [32], [104]
Time	Time is a main resource spent by the consumer either when shopping online or in traditional shops.	[5], [20], [73], [84]
Customer satisfaction	Satisfied consumers are those whose expectations related to online commerce are fulfilled or exceeded.	[1], [36], [53], [78]

Table 2: Conceptual model variables and items

Variables	Items
Security	Hesitation about providing information
	Risk of the loss of privacy
	Risk of identity theft
Information availability	Identical information
	Accurate information
	Timely information
Shipping	Free shipping
	Product delivery
	Delivery of the mistaken product
	Delivery of appropriate size of the product (clothing)
	Quality and freshness of the delivered product
	Product delivery at weekends
Quality	Same quality product
	Same purchase conditions
	Rare product inconsistency
Pricing	Money saving
	Cheaper purchase
	Lower expense per transaction
Time	Time saving
	24/7 purchase
	Smart time spending
Customer satisfaction	Satisfaction with online shopping
	Attractiveness for usage
	Recommendation to others
	Pleasure of usage
	Excellence of usage

In addition to the stated items and variables, the survey also included variables of the sample related to gender, age, education, frequency of Internet usage during the day, approximate maximum amount a consumer may spend on an online purchase, approximate maximum amount a consumer may spend on online purchases in a year, list of the most frequently visited websites for online shopping, expenses that the consumer is willing to pay on product delivery, and maximum time of delivery for free shipping products (Appendix A).

The survey was designed with the answers using the five-point Likert scale ranging from 1 (strongly agree) to 5 (strongly disagree) (Appendix A). After creating the survey and all its elements, evaluation was conducted on a sample of 15 respondents. Since there were no proposed changes, the final version was distributed to respondents. Based on the set survey, variables were defined to measure consumer satisfaction. All the above listed variables were measured using the five-point Likert scale.

Research data for paper were collected with the survey method. After applying this method, subjective respondent opinions were gathered using a questionnaire distributed with the aid of an internet tool as an instrument for data acquisition. When contacting respondents for participating in the study, we used the guidelines with the link to access the survey. Using Internet tools for data acquisition avoids human error and increases data reliability [33]. Additionally, the application of Internet tools for gathering responses reduces the number of socially desirable responses, since the usage of the mentioned tools increases the sense of anonymity [27]. The tool for Google online survey known as the Google Forms was applied in the research.

There are three advantages of using Internet tools for the survey: (1) no time limit for accessing the questionnaire [6]; (2) flexibility regarding the development and application of the questionnaire [24]; and (3) convenience in encoding and data input [3]. Since all respondents were familiar with the Internet tools for the survey, the negative aspect of using Internet tools for data acquisition process was kept to a minimum.

3.2 Demographics and Characteristics of the Sample

The sample included into the survey consisted solely of respondents who occasionally or regularly purchased online. A detailed analysis of the sample concluded that it was fully representative. Nine variables related to the sample were defined and used to determine the demographic data (Table 3). These variables provided that the sample respondent layout responded to the layout of the fundamental group of customers who did online shopping on the market of Serbia. The layout and features of the online customer group for the market of Serbia were established on the basis of the following studies: E-business development: Study on motivators and barriers for online shopping of e-consumers in Serbia, and, Study on e-consumer incentives and barriers in Serbia. Research within the IPA project E-business development [66], [67]. The results obtained by processing the answers to questions related to the set variables, which included nine variables, led to the conclusion that the distribution of participants in the study was adequate (Table 3). Namely, the survey covered a sufficient number of respondents of both gender, i.e. 168 males and 143 females. The participants of all relevant ages were included in the normalized number of participants in the research, and the largest group consisted of those in the range between 31 and 40 years (221 respondents, i.e., 71.06% of the sample). Considering the education of the respondents, the majority of them had higher education i.e. a graduate degree (203 respondents, or 65.27% of the sample). As for the frequency of browsing the Internet during the day, the highest number of respondents, i.e. 118 or 37.94% of the sample, spent more than 4 hours on the Internet. Related to the approximate maximum amount that consumers may spend on a purchase online, or on the online purchases in a year, the largest number of them, i.e. 129 (41.48% of the sample) would likely spend between 3,000 and 5,000 rsd, or 156 of them (50.16 % of the sample) would likely spend more than 20,000 rsd, respectively. Regarding the list of the most frequently used websites by customers to perform an online purchase, the first place was allocated to www.aliexpress.com website, which was used for online shopping by 151 respondents, i.e. 48.56% of the sample. In accordance with the obtained results of the research, the majority of subjects, 122 of them (39.23% of the sample) would always decide in favor of a product offering free shipping option, while 143 respondents (45.98%) stated that free shipping could have the maximum delivery time longer than 1 week.

As already stated, the research enclosed the population of consumers who do online shopping in the Republic of Serbia. The total of 400 requests was sent, and the respondents were asked to participate in the research and fill in the survey. The research was conducted in the period between March 1st and June 30th, 2017. The number of 328 filled-in questionnaires was sent back, where 17 of them were only partially completed and were thus excluded from processing and further research. Thus, 311 valid surveys remained to be processed. Surveys with less than 5% missing answers were processed in a manner that missing information were replaced with arithmetic mean value, according to the recommendation offered as an option in the SmartPLS program software [94].

Table 3: Demographic data

Variables of the sample		No. of consumers	Percentage (%)
Gender	Male	168	54.02
	Female	143	45.98
Age	Under 20	0	0
	Between 21 and 30	59	18.97
	Between 31 and 40	221	71.06
	Between 41 and 50	26	8.36
	Over 50	5	1.61
Education	Elementary school	0	0
	Secondary school	44	14.15
	Polytechnic school	57	18.33
	University	203	65.27
	Master and Doctoral studies	7	2.25

Table 3: continuation			
Frequency of Internet usage per day	Less than 1 hour	12	3.86
	1-2 hours	50	16.08
	2-3 hours	51	16.40
	3-4 hours	80	25.72
	More than 4 hours	118	37.94
Approximate maximum amount a consumer may spend on a purchase	Less than 1,000 rsd	9	2.89
	From 1,000 to 3,000 rsd	36	11.58
	From 3,000 to 5,000 rsd	129	41.48
	From 5,000 to 10,000 rsd	78	25.08
	More than 10,000 rsd	59	18.97
Approximate maximum amount a consumer would spend on online shopping in a year	Less than 1,000 rsd	0	0
	From 1,000 to 5,000 rsd	14	4.50
	From 5,000 to 10,000 rsd	41	13.18
	From 10,000 to 20,000 rsd	100	32.16
	More than 20,000 rsd	156	50.16
List of most frequently used online shopping websites	Site 1	151	48.56
	Site 2	65	20.90
	Site 3	36	11.58
	Site 4	23	7.39
	Site 5	18	5.79
	Site 6	9	2.89
	Site 7	0	0
	Site 8	0	0
	Site 9	0	0
	Site 10	0	0
	Site 11	0	0
	Miscellaneous	9	2.89
Expenses which the consumer is willing to pay at product delivery	I always decide for the product with the free shipping option	122	39.23
	I always decide for the reduced product shipping rate so I believe to be given the best price for both the product and the delivery	108	34.73
	I am willing to pay any product delivery expense which makes my total purchase pricing the lowest	81	26.04
Maximum shipping time with free shipping	3 days	18	5.79
	4 days	28	9.00
	5 days	20	6.43
	1 week	102	32.80
	More than 1 week	143	45.98

3.3 Data Analysis and Validity Evaluation

Confirmatory factor analysis (CFA) was used to assess the validity of the measuring scale of the model. The method of the Partial Least Squares (PLS) was applied by using the program SmartPLS 3. PLS was selected due to the fact that it does not have rigorous demands related to the data distribution type or sample size. It is a soft modeling method able to be flexible while operating diverse statistics modeling problems. The method began to be widely used at the turn of the 21th century in a number of fields such as strategic management, information system management, electronic commerce, marketing, and consumer behavior [40]. The sample size was adequate for the component-based PLS approach which required the sample not to be less than the number obtained by multiplying the number of items with the largest block with 10 [15]. SmartPLS is an independent software specialized for the PLS method and independent of the operating system. Input data can be used in diverse data file formats [82], [83]. The program is based on the nonparametric bootstrap procedure and does not assume data to be normally distributed. Raw data can be used with the prerequisite that latent variable indicators are to be continual. This paper used data from the original 1-5 Likert scale. SmartPLS procedure allowed the individual sign change, where the sign for each individual outer weight becomes equal to the appropriate sign of the original sample [94].

The acquired data were used as input for the PLS program, and statistical significance was evaluated using the bootstrapping resampling method. In the initial estimation phase, 500 subsamples were initiated, while 5000 permutations were used for the final results preparation.

During the model suitability test, suitability index values were determined, with the values NFI (Normed fit index) 0.93, CIF (Comparative fit index) 0.97 and NNFI (Non normed fit index) 0.95. Based on these values, it can be concluded that the proposed model is suitable for application [41], [71].

The estimation of the convergent validity was determined on the basis of testing Average Variance Extracted (AVE) [37]. The prerequisite of the convergent validity was that AVE crossed the lower limit of acceptability of 0.50 (AVE ≥ 0.50). AVE values for all model variables were over 0.50, with the lowest AVE value being 0.713 for quality, meaning that the prerequisite was fulfilled (Table 4).

Table 4: Scale characteristics of the presented model

Model variable	ρc	AVE	Correlation coefficient - Fornell-Larcker criterion						
			SE	IA	SH	QU	PR	TI	CS
SE	0.935	0.828	*0.91*						
IA	0.905	0.761	-0.047	*0.872*					
SH	0.939	0.722	-0.121	0.531	*0.849*				
QU	0.881	0.713	-0.122	0.2	0.117	*0.844*			
PR	0.959	0.887	-0.085	0.483	0.204	0.239	*0.942*		
TI	0.941	0.842	-0.021	0.13	0.236	0.125	0.096	*0.917*	
CS	0.962	0.835	-0.043	0.618	0.743	0.246	0.518	0.3	*0.914*

Furthermore, factor loading and composite reliability were examined in order to establish the reliability of each item and construct in the model. The determined factor loading ranged from 0.776 to 0.973, which was significantly higher than 0.7 as the lower acceptability limit (Table 5). Composite reliability ($ρ_c$) for all factors exceeded the necessary minimum of 0.80, with the lowest value being 0.881 for quality (Table 4). Based on the obtained values, it can be stated that all items and all variables fulfill the conditions of reliability and convergent validity [15], [43].

Table 5: Results of the confirmatory factor analysis for the presented model

Items	Arithmetic mean	Standard deviation	Factor loading	T-statistics
SE1	0.895	0.198	0.973	4.925
SE2	0.795	0.195	0.849	4.353
SE3	0.844	0.209	0.904	4.315
IA1	0.861	0.024	0.859	36.294
IA2	0.914	0.016	0.914	57.673
IA3	0.839	0.022	0.842	39.053
SH1	0.83	0.015	0.83	56.688
SH2	0.913	0.01	0.913	92.938
SH3	0.801	0.029	0.805	28.161

Table 5: continuation				
SH4	0.863	0.019	0.866	45.602
SH5	0.79	0.029	0.794	27.721
SH6	0.88	0.024	0.882	37.08
QU1	0.89	0.039	0.897	22.884
QU2	0.779	0.057	0.776	13.52
QU3	0.847	0.057	0.856	15.059
PR1	0.926	0.013	0.925	70.21
PR2	0.971	0.005	0.971	184.967
PR3	0.928	0.011	0.928	80.951
TI1	0.863	0.029	0.866	29.68
TI2	0.924	0.019	0.924	49.924
TI3	0.958	0.01	0.96	94.653
CS1	0.945	0.006	0.946	150.528
CS2	0.877	0.016	0.879	55.047
CS3	0.95	0.007	0.95	132.771
CS4	0.859	0.015	0.86	56.555
CS5	0.93	0.009	0.931	104.135

SE - Security; IA - Information availability; SH - Shipping; QU - Quality; PR - Pricing; TI - Time; CS - Consumer satisfaction.

Composite reliability (ρ_c) for all factors exceeds the required minimum of 0.80, with the lowest value of 0.881 for the quality (Table 4). AVE values for all model variables surpass 0.50, and the lowest AVE value is 0.713 for quality (Table 4).

The assessment of the discriminant validity between the model variables includes the verification whether the square root of AVE for each variable surpasses the correlations between those variables. The highest correlation between any pair of variables in the model is between the delivery and consumer satisfaction and it is 0.743 (Table 4). This correlation value is lower than the lowest square root of AVE for any variable, and it is 0.844 for quality, implying that the discriminant validity criterion is met. The values presented diagonally (italic) depict the square root of AVE for that model variable.

Apart from the Fornell-Larcker criterion for estimating the discriminant validity, the paper also uses the heterotrait-monotrait ratio of correlations (HTMT). The reasons are twofold. Firstly, it is not possible to provide a completely reliable estimation of the discriminant validity between model variables using the Fornell-Larcker criterion only; hence, the proposition is to utilize HTMT criterion as well. Secondly, negative correlations between variables, especially between safety and all others, can be observed in Table 4. Since HTMT criterion eliminates negative correlation values and ranks them between the values 0 and 1, its usage in the discriminant validity estimation is completely justified. If HTMT value is below 0.90, then the discriminant validity is established between two variables [95]. Given that all the correlation values presented in Table 6 are lower than 0.90, it can be concluded that the discriminant validity criterion is thus satisfied.

Table 6: Correlation coefficient - HTMT criterion

Model variable	Correlation coefficient - HTMT criterion						
	SE	IA	SH	QU	PR	TI	CS
SE							
IA	0.054						
SH	0.136	0.58					
QU	0.146	0.234	0.142				
PR	0.091	0.538	0.224	0.269			
TI	0.06	0.152	0.23	0.146	0.105		
CS	0.044	0.679	0.736	0.282	0.546	0.323	

4 Testing the Research Model Hypotheses

Testing the explanatory power of the presented model (Figure 2), as well as the strength and statistical significance of individual paths was carried out using PLS. The featured model explained 72.4% in the variation of the dependent variable customer satisfaction (Figure 2).
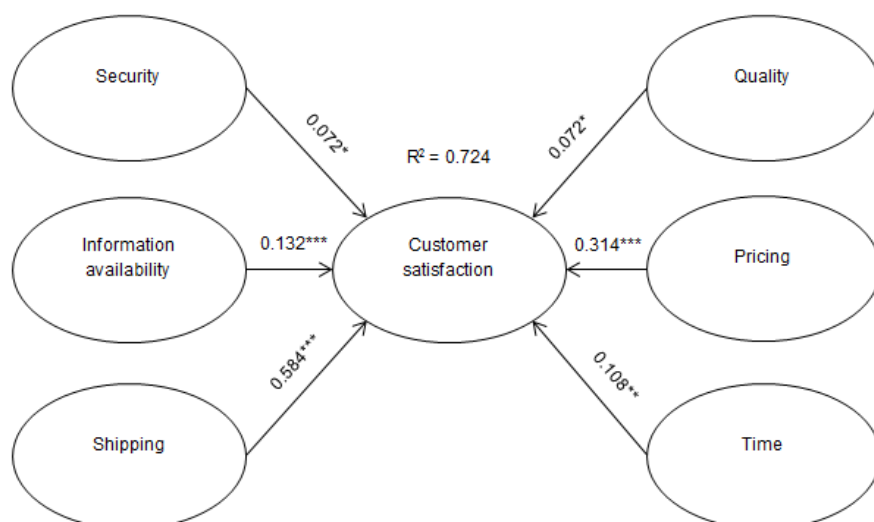
Figure 2: PLS analysis of the research model
Statistical path significance: *** p<0.001; ** p=0.001; * p<0.05.

The study of individual path coefficients leads to the conclusion that three out of six paths presumed in the model are statistically significant at the level p<0.001. Of the remaining three paths, one is significant at the level p=0.001, and the other two at the level p<0.05. Shipping has the most significant impact on the consumer satisfaction (β=0.584; p<0.001), thus providing the support for the hypothesis H3. Positive effect onto the consumer satisfaction can also be attributed to pricing (β=0.314; p<0.001), information availability (β=0.132; p<0.001) and time (β=0.108; p=0.001), supporting the hypotheses H5, H2 and H6. Security (β=0.072; p<0.05) and quality (β=0.072; p<0.05) have the identical positive effect on consumer satisfaction, providing support to the hypotheses H1 and H4. It is also important to consider the dependent variable percentage explained by each prediction variable. This percentage can be calculated by multiplying the values of the coefficient β with the value of the correlation coefficient. Therefore, the analysis demonstrates the following: the variable security explains 0.3% of the variability observed in the variable customer satisfaction; the variable information explains 8.15% of the variability observed in the variable customer satisfaction; the variable shipping explains 43.39% of the variability of the variable customer satisfaction; the variable quality accounts for 1.77% of the variability of the variable customer satisfaction; the variable pricing accounts for 16.26% of the variability of the customer satisfaction variable; and time variable accounts for 3.24% variability of the customer satisfaction variable. These data also emphasize the dominant impact of shipping onto the customer satisfaction.

5 Result Analysis

The results presented in the research demonstrate that all examined determinants of online purchase and all items from the survey are suitable and related to customer satisfaction. All set hypotheses have been confirmed. However, the strength of the relationship varies for each dominant and hypothesis. Shipping, pricing and information availability have the greatest impact onto the e-customer satisfaction on the market of Serbia. Considerably lower impact is attributed to quality, time and safety.

The research has also revealed that the shipping service has the greatest impact onto the online customer satisfaction. This result relates to the fact that logistics service has not been sufficiently developed on the market of Serbia in order to provide an efficient and reliable shipping of the purchased items. In the Internet surroundings, customers can, very fast and easy, at a click of a mouse, find and buy a product; thus, they expect a fast, accurate and reliable delivery as well. Yet, deliveries are sometimes late, not fulfilling the customer expectations. Likewise, it can happen that the perception of the delivered product quality does not coincide with the expected product quality. It all makes customers feel dissatisfied with shipping. The obtained results correspond to [17], [105] stating that shipping has a significant impact onto the customer satisfaction. For example, a research conducted in China displays that shipping and quality of the delivered product directly influence customer satisfaction [105]. Online commerce does not recognize spatial and time barriers. Consumers can shop anytime anywhere, e.g. at the office, the dormitory, or home. As it is necessary for the products to be delivered to consumers by hand; hence, delivery plays a key role in online commerce. If shipping is not free of charge, consumers will pay great attention to that particular customer satisfaction item. It has been established that, for online shopping, reliability, security and delivery play key roles in meeting the consumers' expectations and making them satisfied [105]. The research conducted on the market of South Africa reveals that the greatest dissatisfaction of online customers is attributable to long shipping period [86]. According to [102], the most critical factor for fulfilling the customer expectations is the product delivery service. The customer would like to acquire the set product in the set time and according to the set promises [18]. Timely and reliable shipping increases the satisfaction and encourages repurchases [1]. Therefore, it is imperative that online shops provide reliable shipping, secure packaging and timely delivery of products.

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The second important determinant of online shopping is pricing. This is an underdeveloped market where product and service prices are always essential. Since the price of goods and services presents a very important motivation factor for consumers, many online shoppers expect from online stores to offer their products and services at prices lower than those in traditional stores [68]. The research conducted on the market of South Africa demonstrates that buyers expect the products purchased online to have lower prices in comparison to products in traditional stores [86]. Hence, there exists the correlation between pricing and customer satisfaction [21], [32], [104]. The obtained results correspond to [29], [65] which state that product price can increase customer satisfaction. The research conducted in Korea proves that pricing and confidence present key factors in attracting and satisfying customers [74]. This can also be compared to previous studies [80] that determine that pricing presents the most important factor influencing customer satisfaction. Consumers always pay significant attention to prices when purchasing products and services [21], [32], [104]. Discounts while purchasing influence consumers to believe in prices, and ultimately they affect their satisfaction [8]. According to [47], price has a significant impact on customer satisfaction, especially in the initial phases of online purchase. Likewise, according to [25], [48], it has been determined that, on the market of Thailand, the experienced e-consumers are increasingly more influenced by pricing. Finally, it can be concluded that pricing has a key role in fulfilling the expectations of all consumers.

Consumer satisfaction is positively related to information availability. The obtained result is in accordance with [62], [17] stating that information availability impacts customer satisfaction. Internet has made access to information easier [100]. According to [98], better information on products and services while purchasing online relates to the higher degree of satisfaction. It is emphasized that information should be up-to-date, accurate, reliable and complete. It is necessary that online stores guarantee all information on products ever seen by the consumer. Sometimes, the reason for returning a product can be incomplete and inaccurate information. It is necessary to ensure that all information is easily accessible with the minimum clicks, as well as easily comparable with competition and similar products. Apart from the benefits of the information that websites provide for online shoppers, consumers can also benefit from browsing the information left by other consumers. Consumers may read comments by other customers before deciding on an online purchase. According to [86], the wide spectrum of available products and the provision of complete information lead to recommendations and word-of-mouth advertising.

The quality as a determinant of online shopping also demonstrates a positive impact on customer satisfaction. The obtained results coincide with [44], [61], [85] that state that product and service quality can improve customer satisfaction. Nevertheless, it is important to consider that this research is related to the developing market, where quality still does not have a dominant influence as pricing or shipping. For those reasons, the obtained results are slightly different in comparison to a number of studies [38], [55], [88], [105]. These studies suggest that online stores should provide a consistent product quality. It is especially significant if one considers that a consumer cannot directly grade product quality, but they rather have to rely on information and offer observed on a website. Based on the website offer, the consumer forms their expectations; if these are fulfilled, e-shoppers will be pleased and will continue purchasing online. Vice versa, if expectations are not met, they will be dissatisfied. According to [105], quality presents the fundamental dimension of satisfaction. It is to be expected as true for the market of Serbia only once it expands and once the living standards and economic powers are increased.

Considering time as a variable, the results demonstrate that this determinant is also significantly connected to customer satisfaction. However, these results also differ from some previous research claiming that time has a very significant impact on customer satisfaction [5], [26], [79]. The diversity of results originates from the fact that online shopping on the market of Serbia is mostly related to the global commerce. Hence, the consumers are primarily concerned with using the information on websites to detect products at a lower price and to have that product delivered efficiently. Time consumption is not a priority. These results are similar to [2], stating that saved time is not a significant factor at all in influencing the satisfaction of Malaysian consumers. Time consumption is especially significant in retail, where consumers spend a considerable amount of time shopping in traditional stores (e.g. driving to the store, finding a parking lot, waiting at the cashier, etc.) [4], [84]. Stated activities can be related to substantial time savings in e-shopping, leading to the increase of customer satisfaction [86]. This segment in e-commerce is still not developed enough on the Serbian market; yet, the future may expect time to have more impact on customer satisfaction.

Security as an online purchase determinant is directly related to customer satisfaction. Nevertheless, this relation is rather weak. This result is to a certain degree different in relation to the most of studies that suggest that security has a significant impact on customer satisfaction [34], [79]. For example, a research conducted in South Africa deployed that the main reason why many consumers do not wish to do online shopping is related to the fear of fraud, theft, credit card usage, hackers, and dishonest salespersons. [86]. The result obtained in this research can be explained by the fact that the survey respondents have been using online shopping services for a longer period of time and have acquired trust in transaction security. For these consumers, security is a dimension implied and hence does not provoke their excessive satisfaction. Nevertheless, if this dimension were to be missing, it would cause a significant dissatisfaction. Security is of utmost importance for attracting new clientele and online stores should work more intensely on raising the security level. The purchase of the relevant certificate from organizations such as eTrust is one of the options to make a website more reliable [55]. This will make the website become more secure; it will increase the customer satisfaction and thus increase sales. For example, Scribendi - a company offering editing and proofing services for English documents, acquired the VeriSign SSL Certificate - a certificate for the utmost trust, and they increased the sales of their services for 27% [97]. When online companies possess a certificate, the address

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bar of their website is green and their web addresses begin with https://, which clearly suggests the consumer that the website is secure and to be trusted.

6   Conclusion

Due to technological innovation, the traditional mode of purchase has become inadequate for some individuals. People now prefer simpler modes for acquiring brands and reaching stores, and it can be stated that the Internet has fundamentally changed the consumers' ideas on convenience, speed, price, and product and service information. As a result, vendors have found a new approach to create value for customers and build relationships with them.

This study intended to reveal the scale in which the following variables - security, information availability, shipping, quality, pricing and time - affect the dependent variable customer satisfaction. The model developed for this study was tested using the confirmatory factor analysis. Confirmatory factor analysis generated results that demonstrated a high level of reliability and validity between variables. The present model explained that 72.4% of the variation relates to the dependent variable customer satisfaction. The results of this study confirmed that security, information availability, shipping, quality, pricing and time presented significant predictors of customer satisfaction. These variables have a significant positive effect on customer satisfaction. Likewise, the results demonstrated that shipping is the most powerful predictor of customer satisfaction, thus emphasizing the importance of its implementation. This paper should contribute to better understanding of the determinants that affect customer satisfaction, so customers would continue purchasing online. Likewise, the paper should also provide guidelines to online stores for better definitions of their marketing strategies.

Websites List

Site 1: AliExpress
http://www.aliexpress.com

Site 2: Amazon
http://www.amazon.com

Site 3: eBay
https://www.ebay.com

Site 4: Alibaba
https://www.alibaba.com

Site 5: Sportsdirect
https://rs.sportsdirect.com

Site 6: Asos
http://www.asos.com

Site 7: Sammydress
http://www.sammydress.com

Site 8: Rosegal
http://www.rosegal.com

Site 9: A4c
https://www.a4c.com

Site 10: Fasttech
https://www.fasttech.com

Site 11: Geizhals
https://geizhals.eu

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The Influence of Online Shopping Determinants on Customer Satisfaction in the Serbian Market

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Appendix A: Research Instrument - Questionnaire

The full list of questions.

1. What is your gender?

   a) Male
   b) Female

2. How old are you?

   a) Less than 20
   b) 21-30
   c) 31-40
   d) 41-50
   e) More than 50

3. What is your degree of education?

   a) Elementary school
   b) Secondary school
   c) Polytechnic school
   d) University
   e) Master and Doctoral studies

4. How often do you browse the Internet during the day?

   a) Less than 1 hour
   b) 1-2 hours
   c) 2-3 hours
   d) 3-4 hours
   e) More than 4 hours

5. What is the approximate maximum amount you would spend on an online purchase?

   a) Less than 1,000 rsd
   b) From 1,000 to 3,000 rsd
   c) From 3,000 to 5,000 rsd
   d) From 5,000 to 10,000 rsd
   e) More than 10,000 rsd

6. What is the approximate maximum amount you would spend on online purchases in a year?

   a) Less than 1,000 rsd
   b) From 1,000 to 5,000 rsd
   c) From 5,000 to 10,000 rsd
   d) From 10,000 to 20,000 rsd
   e) More than 20,000 rsd

7. Rank from 1 to 5 the most frequently used online shopping websites.

	Websites:
a)	AliExpress (https://www.aliexpress.com/)
b)	Amazon (https://www.amazon.com/)
c)	eBay (http://www.ebay.com/)
d)	Alibaba (https://www.alibaba.com/)
e)	Sportsdirect (https://www.sportsdirect.com/)
f)	Asos (http://www.asos.com/)
g)	Sammydress (http://www.sammydress.com/)
h)	Rosegal (http://www.rosegal.com/)
i)	A4c (http://www.a4c.com/)
j)	Fasttech (https://www.fasttech.com/)
k)	Geizhals (https://geizhals.eu/)
l)	Others (name them):

8. Which statement best describes the expenses you are willing to pay for product delivery in online purchase?

- a) I always decide for the product with the free shipping option.
- b) I always decide for the reduced product shipping rate so I believe to be given the best price for both the product and the delivery.
- c) I am willing to pay any product delivery expense that makes my total purchase pricing the lowest.

9. What is the maximum shipping time after the online purchase you are willing to accept in order to have free shipping?

- a) 3 days
- b) 4 days
- c) 5 days
- d) 1 week
- e) More than 1 week

Rate the online shopping determinants in the following statements as follows: 1 - strongly agree, 2 - agree, 3 - neither agree nor disagree, 4 - disagree, 5 - strongly disagree.

Shipping

	Statements:	1	2	3	4	5
a)	The option free shipping in online shopping increases the number of sales.					
b)	After the online shopping, customers are concerned whether the ordered product will be delivered.					
c)	Online purchase makes customers feel concerned about delivering the wrong product.					
d)	After the online shopping, consumers are anxious whether the ordered product (clothing) will be of appropriate size.					
e)	After the online purchase, consumers are troubled regarding the quality or freshness of the delivered product.					
f)	Online shopping offers the shipping options on weekends as well.					

Pricing

	Statements:	1	2	3	4	5
a)	Online shopping saves money in comparison to traditional shopping.					
b)	Online shopping is cheaper than traditional shopping.					
c)	Online shopping significantly reduces expenses per transaction in comparison to traditional shopping.					

Quality

	Statements:	1	2	3	4	5
a)	The product ordered online is the same quality as the product purchased in a store.					
b)	E-shopping provides same purchasing conditions as traditional shopping.					
c)	The product ordered online is rarely incompatible with the product purchased in a store.					

Security

	Statements:	1	2	3	4	5
a)	While purchasing online, I hesitate to provide my credit/debit card number.					
b)	When purchasing online, there is a risk of the loss of privacy.					
c)	When purchasing online, there is a risk of identity theft.					

Time

	Statements:	1	2	3	4	5
a)	Online shopping saves time.					
b)	Online shopping offers the possibility of shopping 24/7.					
c)	Online shopping is the smart way to spend time.					

Information availability

	Statements:	1	2	3	4	5
a)	Information on the product online is identical to the information on the product in a store.					
b)	Information on the product online is precise.					
c)	Information on the product online is up-to-date.					

Customer satisfaction

	Statements:	1	2	3	4	5
a)	I am satisfied that websites offer online purchasing options.					
b)	Internet shopping makes the purchasing process interesting.					
c)	I would recommend online shopping to other consumers.					
d)	I enjoy online shopping.					
e)	It is my opinion that online shopping is excellent.					