

Determinants of e-commerce satisfaction: a comparative study between Romania and Moldova

The
satisfaction of
e-commerce
consumers

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Abstract

Purpose – The purpose of this article is to highlight the relevance of the factors that influence the satisfaction of e-commerce consumers in Romania and Moldova. The study aims to clearly define the main influence factors, so that the marketing managers of the online stores can adopt scientific well-founded decisions.

Design/methodology/approach – The paper opted for a study including a large sample of 399 respondents from two countries. For the analysis of the factors influencing the e-commerce satisfaction, multiple linear regression analysis was implemented, and their differentiation within the two countries was highlighted by multivariate analysis of variance.

Findings – The research conducted and the results obtained show that there is a differentiation of the factors that influence the level of satisfaction of e-commerce users in Romania and Moldova.

Research limitations/implications – The research is still limited in terms of population studied to only two countries: Romania and Moldova. Although the study is intended to be exhaustive by analyzing no less than 11 factors influencing the satisfaction generated by e-commerce, it is still limited to this group of representative factors. Another limitation has to do with the limited number of demographic variables the authors have included.

Practical implications – Based on the results, the managerial implications for e-commerce companies that want to uniquely address consumers in Romania and Moldova are related to the decisions of marketing and sales managers who must allocate budgets and resources to improve the eight aspects highlighted in the paper. Also, the e-commerce companies should not allocate resources for the implementation of functionalities such as in-app after sales services, the possibility to cancel an order or the live consultant support feature, because these aspects do not influence the satisfaction of e-commerce consumers in Romania and Moldova.

Originality/value – This paper is the first in the scientific literature that implements a comparative study on the influence factors regarding the e-commerce satisfaction in Romania and Moldova. Also, it is important to mention that the present study is an exhaustive one because it includes many influence factors that were analyzed separately in the previous research papers from literature review.

Keywords E-commerce satisfaction, E-commerce comparative study, Romania and Moldova, E-commerce influencing factors

Paper type Research paper



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1. Introduction

1.1 *The general context and the purpose of the research*

E-commerce is an increasing activity present in the modern life of people and companies around the world. According to [Lin et al. \(2019\)](#), traders and customers try to find common ground for transactions, so that the seller gets a profit and a market share as big as possible, and buyers get the desired satisfaction following the purchase process. The e-commerce relationship works in both the purchase of physical goods and the acquisition and use of services such as banking ([Geebren et al., 2021](#)) in desktop and mobile environments. Thus, in the online environment, trust acts as a mediator for the relationship between service quality and customer satisfaction. The study conducted by [Acquila-Natale and Iglesias-Pradas \(2020\)](#) highlights the importance of communication channels between the store and the customer, as well as the dimensions that affect the relations between the two partners: in-store experience, customer service, privacy and reliability. According to ([Zhang et al., 2019](#)), one of the trends of modern society refers to IT consumerism. In this way, e-commerce and e-business are driven by both individual customers and companies. [Mashud et al. \(2021\)](#) points out that the problem of online commerce can also be seen in a broader context of resilience to certain challenges such as the one generated by the COVID-19 pandemic. Many authors tried to determine what are the main factors influencing e-commerce consumer satisfaction, but no general consensus has been reached in this regard. For example, the research by [Kalia and Paul \(2021\)](#) shows that the mechanisms that generate e-commerce consumer satisfaction are not fully understood by merchants, and the quality of electronic services is an important component of e-commerce. The electronic services were classified according to seven different factors: efficiency, system availability, fulfillment, privacy, responsiveness, compensation, contact. These factors can lead to brand differentiation for online retailers.

Given that previous research has focused on narrow segments in terms of analyzing the factors influencing e-commerce consumer satisfaction, and that there is no general consensus in this regard, the authors believe that this aspect outlines a real “research gap” which deserves to be investigated by scientific methods. As a result, the aim of this research is to identify in a comprehensive way the factors influencing e-commerce satisfaction, as well as the individual importance of these factors on consumer perception in online environments.

The research question proposed for this study is: what are the factors that influence e-commerce consumer satisfaction? To answer this question, a questionnaire-based study was conducted in two countries with emerging economies: Romania and Moldova. One of the countries (Romania) is a member of the European Union, while Moldova is not a member of the European single market.

The methodological approach involved defining 11 main research hypotheses that take into account the possible factors influencing e-commerce satisfaction and 4 additional hypotheses regarding the impact of demographic factors. The study also took into account the analysis of the differences between the influencing factors in the 2 emerging countries.

For the scientific investigation, multiple linear regression, multivariate analysis of variance and correlations were used, both at the level of the entire group of respondents and individually on each country. The results showed that there is a group of influencing factors at the level of the whole sample, while things are different at the country level.

Based on the factual findings of this research, managerial implications that are useful for the owners and administrators of e-commerce stores are outlined with arguments and on a scientific basis. In summary, the general framework of the research carried out in this article contains the following defining elements:

- (1) Introduction: the general context of the research, the research gap and the research question;

- (2) Literature review: a solid analysis based on about 50 references about the factors influencing e-commerce satisfaction;
- (3) The context of e-commerce in the two analyzed countries (Romanian and Moldova);
- (4) Research hypotheses: the technical description of the main and additional research hypotheses, based on research question and previous research results in the literature;
- (5) Sample and instruments: the description of the sample;
- (6) Results: the description of the results obtained in the analysis;
- (7) Discussion: the presentation of the results comparing to the others from the existing literature. Also, in this section, the managerial implications are presented.
- (8) Conclusions: the main findings, the limitations of the research and the future research directions.

This article is organized as follows: introduction and literature review, materials and methods, results, discussions and conclusions.

1.2 Literature review

Numerous studies have been conducted by researchers who wanted to analyze the factors influencing e-commerce satisfaction. Thus, [Nisarz and Prabhakar \(2017\)](#) shows that the USA consumers are very concerned with the quality of electronic services and after sales services. In Vietnam, according to [Phuong and Trang \(2018\)](#), the repurchasing decision is significantly influenced by *the existence of in-app after sales services*.

In the context of the transition from e-commerce to social commerce ([Huang and Benyoucef, 2013](#)), users are increasingly interested in the possibility of receiving regular notifications from the merchant system, so that they are up to date with the status of the orders. Studies conducted by [Sulastri et al. \(2019\)](#) have shown that *the existence of a periodic notification system* can have a positive effect on customer retention by the trader. Push notification [Kumar and Johari \(2015\)](#) are considered to be a business enhancement technique for e-commerce in the global information world.

From the beginning of e-commerce, customers have been interested in as many features as possible and the ability to have control over the delivery process. [Lightner \(2004\)](#) shows that *the possibility to cancel an order* in an e-commerce application is a functionality of great importance for the consumer. This functionality also has an impact on any payments already made on the account of that order [Banerjee and Karforma \(2008\)](#), so as to ensure the quality management ([Zuo et al., 2013](#)).

In China, according to [Siraj et al. \(2020\)](#), buyers attach greater importance to issues such as live chat rooms and *the existence of live chat support*. Research in Finland ([Relas, 2019](#)) shows that e-commerce customers are even interested in real consultancy packages offered by the trader, the existence of which is highly appreciated. Through a live chat system ([Elmorshidy, 2013](#)), the consumer has the perception of a rehumanized relationship with the seller due to the fact that he receives real-time feedback from a real person. Some studies ([Dănăiață et al., 2013](#)) point out that the flow of information is also important for consumers of services provided by public institutions.

The satisfaction perceived by e-commerce consumers is determined by a combination of factors. Among these factors, [Bressolles and Durrieu \(2011\)](#) show that the existence of a price comparison system can positively influence users' perception by improving the navigation process within the list of available offers. According to [Choi et al. \(2019\)](#), online shopping malls customers in China can save significant time by using tools that make it easier for them

to compare prices between different products. In the context of growing competition between sellers, *the existence of a price comparator* can provide a competitive advantage for small enterprises (Consoli, 2017), which can attract customers through this method and optimize their internal processes (Munteanu and Ștefăniță, 2018) and competitiveness (Nițu and Feder, 2012).

The experience of e-commerce consumers also depends to a large extent on the experiences of previous consumers. The impact on online satisfaction is also determined by *the existence of reviews from previous customers*, as some general research shows (Park and Lee, 2009; Anastasiei and Dospinescu, 2018; Lopes *et al.*, 2020; D'Acunto *et al.*, 2020) and by Ventre and Kolbe (2020) in the case of Mexico. A recent study (Tobon and García-Madariaga, 2021) conducted in Spain revealed that word-of-mouth elements in the online environment influence the e-commerce satisfaction perceived by consumers.

According to Khalid *et al.* (2018), the satisfaction of e-commerce participants in Saudi Arabia is significantly influenced by security and *the existence of diversified e-payment methods*. The research conducted by Rasli *et al.* (2018) also shows that in Malaysia, alternative payment methods implemented by e-commerce sites are appreciated. Along the same lines, it was found that buyers of insurance products in Nigeria are aware of the existence of diversified payment methods when purchasing such products through e-commerce sites (Isimoya *et al.*, 2018). In Thailand, it has even analyzed the factors that determine the reuse of e-payment in e-commerce transactions (Ladkoom and Thanasopon, 2020), concluding that the dissemination of alternative payment methods can contribute to e-commerce satisfaction.

Technological developments in the last decade have imposed new models in terms of the technologies used by e-commerce sites. Thus, *the ease of use of the web platform* is an extremely important criterion for the end consumer, given that most applications migrate to the cloud (Vijai and Nivetha, 2020; Lula *et al.*, 2021). In the same vein, Ahmad and Khan (2017) found that Indian consumers are receptive to the ease of use of web platforms when accessing e-commerce services. The result obtained by Phuong and Trang (2018) also shows that factors such as system quality and service quality are key determinants for Vietnamese consumers and have a significant influence on the repurchasing decision.

Recent studies (Rasli *et al.*, 2018) show that in Malaysia, the options for delivering products to the final customer are a determining factor in terms of purchasing decision and satisfaction perceived by e-commerce consumers. Based on the official sites (IT Galaxy, 2021), in Romania some of the online merchants offer customers *the open box delivery option*, thus increasing the degree of trust between the final customer, the carrier and the initial supplier. This option can be included by default in the cost of the online order, or it can be an additional option that requires an additional cost from the buyer.

The e-commerce world has become increasingly competitive and is trying to reach the consumer through various approaches. Such a specific approach involves the product customization feature (Pallant *et al.*, 2020) which is becoming increasingly common among e-commerce vendors. One of the industries that is best suited to customizing customer preferences is the fashion industry (Guercini *et al.*, 2018), which has seen a significant shift from the physical store to the virtual store in recent years. According to Bourlakis *et al.* (2018), *the product customization feature* even leads to the remodeling of B2B activities in the new e-commerce context. These features enrich consumers' experience (Dospinescu and Buraga, 2021; Tangchaiburana and Techametheekul, 2017) through audio and video channels, bringing them closer to the product they want to buy. According to Mashud *et al.* (2021), the customization of the product is also in a strong relationship with the product lifecycle, so it is a very important aspect both for the company and customers.

All the companies operating in the e-commerce area want to increase customer loyalty and increase their specific market share (Agheorghiesei and Ineson, 2011; Dănăiață and

Kirakosyana, 2014). In the Czech Republic, a study conducted by Tahal (2014) revealed that e-commerce *loyalty programs* have a significant impact on the young adult population. This is especially true when it comes to instant reward, while cumulative reward schemes do not have the expected success of traders. On the other hand, the study conducted by Ieva and Ziliani (2017) shows that there are five distinct segments of consumers in terms of preferences for e-commerce loyalty programs. To attract and retain customers, e-commerce vendors also use loyalty programs integrated into social media platforms (He *et al.*, 2019). Thus, the participants in e-commerce processes are integrated in complex information ecosystems, where the consumer's perception is influenced by a variety of channels and methods (Tahal, 2014).

1.3 E-commerce context in Romania and Moldova

For the purpose of this study, the authors have chosen two countries (Romania and Moldova) whose economies are emerging and which have both common elements and differentiating aspects. The common element is the fact that the inhabitants of the two countries speak the same language, and the differentiation is determined by the fact that Romania is a member of the European Union, while Moldova does not belong to the European Union. Moreover, the two countries were at one time part of the same country. In the period 1859–1944, the territory of the Republic of Moldova was incorporated in the territory of Romania. The two countries have both a common history and periods of time that have left their mark on the differentiation of the population from a linguistic, cultural and economic point of view. Romania has a population of about 20 million, while Moldova has about 4 million inhabitants. Official studies reveal big potential for both countries in terms of the evolution of e-commerce value indicators. In Moldova, the revenue in the e-commerce market is projected to reach US\$148m in 2021 (Statista. eCommerce Moldova. Statista.com, 2020). The revenue is expected to show an annual growth rate (period 2021–2025) of 12.4%, resulting in a projected market volume of US\$237m by 2025. The market's largest segment is Fashion with a projected market volume of US\$47m in 2021. User penetration will be 34.2% in 2021 and is expected to hit 38.9% by 2025. The average revenue per user (ARPU) is expected to amount to US\$107.70.

In the case of Romania, the same forecasts (Statista. eCommerce Romania. Statista.com, 2020) estimate that the revenue in the e-commerce market is projected to reach US\$5,200m in 2021. Revenue is expected to show an annual growth rate (CAGR, 2021–2025) of 9.3%, resulting in a projected market volume of US\$7,421m by 2025. Fashion is the market's largest segment, with a projected market volume of US\$1,135m in 2021. User penetration will be 48.1% in 2021 and is expected to hit 56.7% by 2025. The ARPU is expected to amount to US\$308.26. There are no less than 8.34 m e-commerce users in Romania and their number is growing year by year.

The authors note that all value indicators are growing for both countries, suggesting a sustainable growth potential of the e-commerce market in the next 5 years.

2. Materials and methods

2.1 Research hypotheses

The aim of this research is to highlight the influence of different factors on the satisfaction perceived by e-commerce consumers in Romania and Moldova, by analyzing the following 11 indicators: the existence of in-app after sales services, the existence of a periodic notification system regarding the status of order, the possibility to cancel an order, the existence of a live consultant support, the existence of a price comparison feature, the existence of reviews from previous customers, the diversity of payment methods, the ease of use of the web platform, the option to open the package on delivery, the existence of a feature for product customization and the existence of loyalty programs for the customers.

Considering the results obtained in the previous researches from the specialized literature, the authors formulate the following research hypotheses in [Table 1](#).

In addition to these research hypotheses, the authors will also consider potential differentiations depending on various demographic factors such as: country of residence, gender, education level and area of residence (rural vs urban). Given these demographic characteristics, the following additional research hypotheses were formulated, according to [Table 2](#).

Hypothesis	Hypothesis description	Previous research
H1	The existence of in-app after sales services has a significant impact on e-commerce satisfaction level	Nisarz and Prabhakar (2017) , Phuong and Trang (2018)
H2	The existence of periodic notification system has a significant impact on e-commerce satisfaction level	Huang and Benyoucef (2013) , Sulastri <i>et al.</i> (2019) , Kumar and Johari (2015)
H3	The possibility to cancel the order in a e-commerce application has a significant impact on e-commerce satisfaction level	Lightner (2004) , Banerjee and Karforma (2008) , Zuo <i>et al.</i> (2013)
H4	The existence of live consultant support has a significant impact on e-commerce satisfaction level	Siraj <i>et al.</i> (2020) , Relas (2019) , Elmorshidy (2013)
H5	The existence of price comparators has a significant impact on e-commerce satisfaction level	Bressolles and Durrieu (2011) , Choi <i>et al.</i> (2019) , Consoli (2017)
H6	The existence of the reviews from previous customers has a significant impact on e-commerce satisfaction level	Park and Lee (2009) , Anastasiei and Dospinescu (2018) , Lopes <i>et al.</i> (2020) ; D'Acunto <i>et al.</i> (2020) , Ventre and Kolbe (2020)
H7	The diversity of payment methods has a significant impact on e-commerce satisfaction level	Khalid <i>et al.</i> (2018) , Rasli <i>et al.</i> (2018) , Ladkoom and Thanasonon (2020)
H8	The ease of use of the web platform has a significant impact on e-commerce satisfaction level	Nisarz and Prabhakar (2017) , Phuong and Trang (2018) , Vijai and Nivetha (2020) , Lula <i>et al.</i> (2021) , Ahmad and Khan (2017)
H9	The existence of package opening on delivery option has a significant impact on e-commerce satisfaction level	Rasli <i>et al.</i> (2018) , eMAG (2021) , ITGalaxy (2021)
H10	The product customization feature has a significant impact on e-commerce satisfaction level	Pallant <i>et al.</i> (2020) , Guercini <i>et al.</i> (2018) , Bourlakis <i>et al.</i> (2018)
H11	The existence of loyalty programs has a significant impact on e-commerce satisfaction level	Tahal (2014) , Ieva and Ziliani (2017) , He <i>et al.</i> (2019)

Table 1.
The main research hypothesis

Hypothesis	Hypothesis description
H1a	The e-commerce satisfaction level differs according to country of residence
H2a	The e-commerce satisfaction level differs according to gender
H3a	The e-commerce satisfaction level differs according to education level
H4a	The e-commerce satisfaction level differs according to the zone of residence (rural/urban)

Table 2.
The additional research hypothesis

2.2 Sample and instruments

In order to conduct the research, a questionnaire was completed and it was applied to a number of 450 respondents from Romania and Moldova. Of the questionnaires applied, 51 were invalid (incomplete questionnaires or respondents who do not use e-commerce). 399 valid questionnaires were recorded, out of which 206 for the respondents from Romania and 193 for the respondents from Moldova. All respondents were between 18 and 35 years old because the authors wanted to investigate mainly the group that uses modern information technologies intensively. The respondents were selected from the applicants and graduates of a university that has educational centers both in Romania and Moldova. Respondents were not remunerated for their efforts to complete the questionnaires.

Regarding the representativeness of the sample, for the calculation of the minimum sample the RaoSoft tool (<http://www.raosoft.com/samplesize.html>) was used. Considering that the total population of the 2 countries (Romania and Moldova) is approximately 24 million inhabitants, the minimum required population is 385 respondents. This minimum sample was calculated for a confidence level of 95%. According to (Cochran, 1977), the minimum sample size is determined by using three variables: the population proportion (π), the precision level (D) and the confidence interval. The formula is presented below:

$$n = \frac{\pi(1 - \pi)Z^2}{D^2},$$

Where:

- (1) π = population proportion;
- (2) D = precision level (marginal error)
- (3) Z = z-value for confidence level.

In our case, taking into consideration the demographic data of the two analyzed countries, the population proportion was set at 40%, the precision level at 5% and the confidence interval at 95%. The corresponding z-value for the 95% confidence level is 1.96. Based on the Cochran formula, the value of the minimum calculated sample size is $n = 369$.

Given the previous results (Cohran, 1977), it is obvious that our sample of 399 respondents is representative of the cumulative population of the two countries.

From a demographic point of view, the situation of the sample is as follows: 51.63% of respondents are from Romania and 48.37% are from Moldova. In terms of gender, 75.68% are females and 24.32% are males. Depending on the area of residence, 79.44% are from urban areas and 20.56% are from rural areas. Among the respondents, 50.38% are high school graduates, and 49.62% are university graduates.

The questionnaire was applied between May and September 2020, and it consisted of questions aimed at quantifying the perceived level of e-commerce consumer satisfaction, as well as the importance of factors influencing satisfaction. A five-point Likert scale with the following value meanings was used for the questions: value 1 indicates that the variable has no influence on e-commerce satisfaction, while value 5 indicates that the consumer has a very high level of expectation regarding that indicator. In addition to the questions related to the e-commerce satisfaction level, the questionnaire also contained 4 questions about the demographic aspects: country of residence, education level, area of residence (rural/urban), gender.

The internal consistency of the questionnaire was tested by calculating the Cronbach's alpha indicator, whose value is 0.670. Alpha is the indicator that provides the measure of internal consistency reliability; a value greater than 0.60 indicates an acceptable level of reliability (Wim *et al.*, 2008; Shrout, 1998). The data analysis was performed with IBM SPSS Statistics version 21, and the answers received in the questionnaire are described through descriptive statistics (average value and SD).

The main research hypotheses were analyzed and tested by Pearson correlation and multiple linear regression. Multivariate analysis of variance and multiple linear regression analysis were used to test the additional hypotheses.

3. Results

Following the analysis of the data obtained from the respondents, [Table 3](#) shows the descriptive statistics values for the independent variables and the e-commerce level of satisfaction. As it can be seen, the results show that the respondents in the analyzed sample consider that e-commerce level of satisfaction is greatly affected by the availability of various payment methods ($M = 4.78$), the existence of live support consultant ($M = 4.66$), of loyalty programs ($M = 4.60$) and the existence of reviews from the previous customers ($M = 4.39$). Also, low level e-commerce satisfaction is associated with ease of use of web platform ($M = 2.67$), open box delivery option ($M = 3.02$) and the existence of in-app after sales services ($M = 3.63$).

In the scientific approach to identify the relationships between the dependent variable and the independent factors, the authors proceeded to test the multicollinearity for the explanatory variables. The results of this test indicate that the proposed model is relevant because all VIF (variance inflator factor) values are less than 5 ([Salmeron and Garcia, 2018](#); [Daoud, 2017](#)) and the data from [Table 4](#).

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Table 3.
The values of the descriptive statistics for the analyzed variables

Variable	Sample size	Mean	Std. deviation	N
ECommerceSatisfactionLevel	399	4.54	0.58	399
InAppAfterSalesServices	399	3.63	1.14	399
PeriodicNotificationSystem	399	4.11	0.66	399
PossibilityToCancelTheOrder	399	4.19	0.64	399
LiveConsultantSupport	399	4.66	0.69	399
ExistingPriceComparator	399	4.31	0.47	399
ExistingPreviousReviews	399	4.39	0.73	399
VariousPaymentMethods	399	4.78	0.52	399
EaseOfUseOfWebPlatform	399	2.67	1.37	399
PackageOpeningOnDelivery	399	3.02	1.23	399
ProductCustomization	399	4.35	0.49	399
LoyaltyPrograms	399	4.60	0.54	399

Table 4.
The values of the collinearity statistics for the model's variables

Variable	Tolerance	Collinearity statistics	VIF
InAppAfterSalesServices	0.856		1.168
PeriodicNotificationSystem	0.478		2.092
PossibilityToCancelTheOrder	0.662		1.510
LiveConsultantSupport	0.805		1.242
ExistingPriceComparator	0.540		1.852
ExistingPreviousReviews	0.664		1.507
VariousPaymentMethods	0.688		1.453
EaseOfUseOfWebPlatform	0.828		1.208
PackageOpeningOnDelivery	0.837		1.194
ProductCustomization	0.777		1.288
LoyaltyPrograms	0.644		1.553

VIF values indicate very clearly that in our model there is no multicollinearity phenomenon. Given this premise, the authors proceeded to the detailed statistical analysis of the data obtained from the questionnaire.

For testing the H1–H11 research hypotheses, the multiple linear regression analysis was used to predict the dependent variable (e-commerce satisfaction level) based on the set of independent variables: the existence of in-app after sales services, the existence of a periodic notification system about the order status, the possibility to cancel an order from the application, the existence of live support consultant, the reviews from previous customers, the existence of a price comparison feature, the possibility to pay with various methods, the ease of use of the web platform, the open box delivery option, the existence of product customization feature and the existence of the loyalty programs. In Table 5 the ANOVA values for the proposed model are shown.

As it can be seen, it is obvious that a set of variables are statistically significant for predicting the dependent variable ($F = 145.02, p < 0.01$). Also, it is important to note that Adjusted R Square has a value of 0.799.

By applying linear multiple regression analysis, the data in Table 6 was obtained. All variables were included in the analysis and, by using the enter method, all the factors started with the same initial value.

The data obtained from multiple linear regression analysis indicate some important aspects that are valid throughout the sample. Thus, of the 11 variables analyzed, only 8 proved to be statistically significant, while 3 of them (in-app after sales services, the possibility to cancel the order and live consultant support) did not have a significant influence within the global sample for respondents from Romania and Moldova.

From the analysis of Beta coefficients it can be seen that the possibility to pay by various methods is the most important factor influencing e-commerce satisfaction, acting in a positive direction ($B = 0.435$). E-commerce customers from the two analyzed countries want to have various payment options for the purchases they make in e-stores. In terms of importance, the next factor that matters to customers is the existence of a periodic notification system

	Sum of squares	Df	Mean square	F	Sig
Regression	108.76	11	9.89	145.02	0.00
Residual	26.39	387	0.07		
Total	135.15	398			

Table 5.
ANOVA values

Independent variables	Standardized beta	Std. error	t	Sig
InAppAfterSalesServices	-0.045	0.012	-1.840	0.067
PeriodicNotificationSystem	0.239***	0.029	7.358	0.000
PossibilityToCancelTheOrder	-0.001	0.025	-0.024	0.980
LiveConsultantSupport	-0.046	0.021	-1.847	0.066
ExistingPriceComparator	0.134***	0.038	4.368	0.000
ExistingPreviousReviews	0.125***	0.022	4.537	0.000
VariousPaymentMethods	0.435***	0.030	16.068	0.000
EaseOfUseOfWebPlatform	0.071***	0.010	2.875	0.004
PackageOpeningOnDelivery	0.082***	0.012	3.354	0.001
ProductCustomization	0.227***	0.030	8.914	0.000
LoyaltyPrograms	0.159***	0.030	5.686	0.000

Table 6.
The values of the coefficients in the multivariate linear regression model

Note(s): * Significant at the level 10%, ** significant at the level 5%, *** significant at the level 1%

regarding the order status ($B = 0.239$). The authors also note that all other independent variables have a positive influence on the perception of e-commerce satisfaction. Thus, customers are interested in the possibility of product customization ($B = 0.227$), loyalty programs ($B = 0.159$), the existence of a price comparison feature ($M = 0.134$), the existence of previous reviews ($B = 0.125$). The statistically significant variables, but of less importance, are ease of use of the web platform ($B = 0.071$) and the package opening on delivery option ($B = 0.082$).

Considering the results obtained from the scientific analysis, the authors conclude that hypotheses H2, H5, H6, H7, H8, H9, H10, H11 are validated for Romania and Moldova, which means that the correlations are confirmed for the variables: periodic notification system, price comparison feature, the existence of previous reviews, various methods of payment, ease of use of the web platform, open box delivery option, product customization feature and loyalty programs.

At the same time, for the cumulated population in Romania and Moldova, hypotheses H1, H3 and H4 are not confirmed. This means that, from a statistical point of view, the following variables are not significant for consumers' perception of e-commerce satisfaction: in-app after sales services, the possibility to cancel an order and the existence of live chat support.

To test the additional hypotheses that were described in Table 2, the authors performed a multivariate analysis of variance. Through this scientific approach, the authors wanted to analyze how customers' perception on e-commerce satisfaction depends on demographic variables: country of residence, gender, education level, area of residence. The complete results of the multivariate analysis of variance are presented in detail in Table 7.

Based on the data obtained from multivariate analysis of variance, the authors conclude that the country of residence (H1a) differentiates customers' perception on e-commerce satisfaction. This result suggests that independent variables may have differentiated importance and values for the populations of the two analyzed countries. The biggest differences between Romania and Moldova are reflected in the variables: periodic notification system ($F = 6,270, p < 0.05$), the existence of a price comparison tool ($F = 17,836, p < 0.01$), ease of use of the web platform ($F = 3.572, p < 0.10$), open box delivery option ($F = 35.521, p < 0.01$) and the existence of loyalty programs ($F = 10.680, p < 0.01$). Also, significant differences are manifested only partially in the case of two other socio-demographic variables: education level (H3a) and gender (H2a). It is important to note that the analysis conducted by the authors shows that there are no significant differences determined by areas of residence (rural vs urban) in terms of the perception on e-commerce satisfaction for users in the two countries.

Given the scientific data obtained in Table 7, the authors conclude that the hypothesis H1a is confirmed, while the hypotheses H2a and H3a are partially confirmed. Also, the H4a hypothesis is not confirmed.

In order to highlight the differences between the respondents from the two countries, multiple linear regression analysis was performed on each group. The detailed results of this analysis are presented in Table 8.

Data show that the e-commerce satisfaction for the Romania customers can be predicted in a positive direction based on the existence of periodic notification system (Beta = 0.333, $p < 0.01$), the existence of reviews from previous customers (Beta = 0.1717, $p < 0.01$), the various payment methods (Beta = 0.277, $p < 0.01$), the ease of use of web platform (Beta = 0.113, $p < 0.01$) and product customization features (Beta = 0.347, $p < 0.01$).

Regarding the Moldovan respondents, it can be noted that there are several factors that influence e-commerce satisfaction. Thus, the variables that have a significant influence are the existence of periodic notification system (Beta = 0.158, $p < 0.01$), live consultant support (Beta = -0.059, $p < 0.05$), the price comparison feature (Beta = 0.225, $p < 0.01$), previous reviews (Beta = 0.223, $p < 0.01$), various methods of payment (Beta = 0.531, $p < 0.01$), open

Source/Variable	df	F	Sig	The satisfaction of e-commerce consumers
Country	InAppAfterSalesServices	1	0.056	0.813
	PeriodicNotificationSystem*	1	6.270	0.013
	PossibilityToCancelTheOrder	1	0.007	0.932
	LiveConsultantSupport	1	0.488	0.485
	ExistingPriceComparator***	1	17.836	0.000
	ExistingPreviousReviews	1	1.619	0.204
	VariousPaymentMethods	1	1.971	0.161
	EaseOfUseOfWebPlatform*	1	3.572	0.060
	PackageOpeningOnDelivery***	1	35.521	0.000
	ProductCustomization	1	0.433	0.511
Gender	LoyaltyPrograms***	1	10.680	0.001
	InAppAfterSalesServices	1	0.289	0.591
	PeriodicNotificationSystem	1	1.099	0.295
	PossibilityToCancelTheOrder**	1	6.717	0.010
	LiveConsultantSupport	1	0.477	0.490
	ExistingPriceComparator***	1	9.028	0.003
	ExistingPreviousReviews***	1	32.471	0.000
	VariousPaymentMethods	1	2.732	0.099
	EaseOfUseOfWebPlatform	1	0.001	0.978
	PackageOpeningOnDelivery**	1	4.093	0.044
RuralUrban	ProductCustomization	1	2.224	0.137
	LoyaltyPrograms	1	1.437	0.231
	InAppAfterSalesServices	1	3.338	0.068
	PeriodicNotificationSystem	1	0.682	0.410
	PossibilityToCancelTheOrder	1	1.070	0.302
	LiveConsultantSupport	1	0.071	0.790
	ExistingPriceComparator	1	2.459	0.118
	ExistingPreviousReviews	1	0.136	0.712
	VariousPaymentMethods	1	1.298	0.255
	EaseOfUseOfWebPlatform	1	1.073	0.301
EducationLevel	PackageOpeningOnDelivery**	1	6.663	0.010
	ProductCustomization	1	0.022	0.883
	LoyaltyPrograms	1	0.001	0.978
	InAppAfterSalesServices**	3	3.433	0.017
	PeriodicNotificationSystem	3	1.925	0.125
	PossibilityToCancelTheOrder***	3	5.043	0.002
	LiveConsultantSupport	3	1.011	0.388
	ExistingPriceComparator**	3	2.846	0.037
	ExistingPreviousReviews***	3	6.738	0.000
	VariousPaymentMethods	3	2.312	0.076
	EaseOfUseOfWebPlatform	3	1.682	0.170
	PackageOpeningOnDelivery	3	1.143	0.332
	ProductCustomization	3	0.332	0.802
	LoyaltyPrograms	3	1.748	0.157

Note(s): * Significant at the level 10%, ** significant at the level 5%, *** significant at the level 1%

Table 7.
Predictors and their contributions to the explanation of the dependent variables of the model

box delivery option (Beta = 0.085, $p < 0.01$), product customization features (Beta = 0.083, $p < 0.01$) and the existence of loyalty programs (Beta = 0.210, $p < 0.01$).

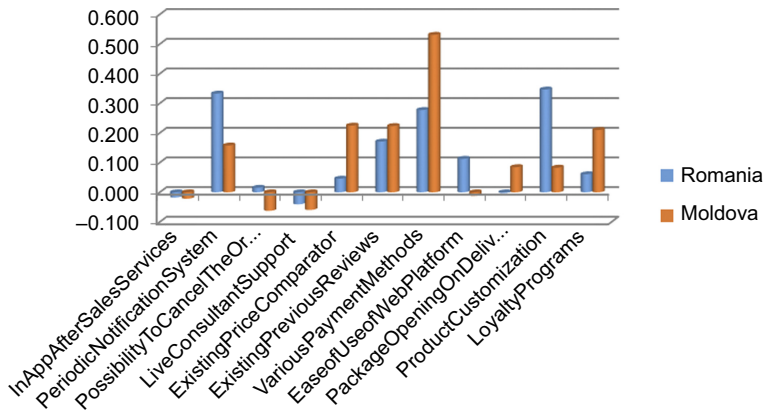
A synthetic image of the situation of the values of the coefficients from multiple linear regression models that were obtained as a result of multivariate analysis of variance is presented in Figure 1, for each country.

Table 8.
Regression analysis for
e-commerce
satisfaction in
Romania vs Moldova

Independent variable	Standardized beta coefficients for <i>Romania</i>	Sig	Standardized beta coefficients for <i>Moldova</i>	Sig
InAppAfterSalesServices	-0.017	0.619	-0.022	0.464
PeriodicNotificationSystem	0.333***	0.000	0.158***	0.000
PossibilityToCancelTheOrder	0.015	0.693	-0.062	0.095
LiveConsultantSupport	-0.040	0.279	-0.059**	0.035
ExistingPriceComparator	0.046	0.240	0.225***	0.000
ExistingPreviousReviews	0.171***	0.000	0.223***	0.000
VariousPaymentMethods	0.277***	0.000	0.531***	0.000
EaseOfUseOfWebPlatform	0.113***	0.001	-0.012	0.693
PackageOpeningOnDelivery	-0.003	0.943	0.085***	0.006
ProductCustomization	0.347***	0.000	0.083***	0.006
LoyaltyPrograms	0.061	0.143	0.210***	0.000

Note(s): * Significant at the level 10%, ** significant at the level 5%, *** significant at the level 1%

Figure 1.
Differences in the
expected e-commerce
satisfaction in terms of
the analyzed
independent variables
(Romania vs Moldova)



The obtained models that are based on multiple linear regression confirm that there are significant differences in the importance of independent variables that determine the perception of e-commerce satisfaction.

4. Discussion

Based on the results obtained from the research, the authors highlight some important aspects. First, it is noted that the factors influencing e-commerce satisfaction in the entire analyzed sample are different from the factors influencing consumers in each country. Thus, at the level of consumers in both countries, research hypotheses were validated, that certify that e-commerce consumer satisfaction is significantly influenced by the existence of periodic notification system, the existence of a price comparison tool, the existence of reviews from previous customers, the possibility to use different payment methods, the ease of use of the web platform, the open box delivery option, the existence of product customization feature and the loyalty programs. At the level of the analyzed population in Romania and Moldova, this research confirms the partial results from the literature highlighted previously (Huang and Benyoucef, 2013; Sulastri *et al.*, 2019; Kumar and Johari, 2015; Bressolles and Durrieu, 2011;

Choi *et al.*, 2019; Consoli, 2017; Park and Lee, 2009; Anastasiei and Dospinescu, 2018; Lopes *et al.*, 2020; D'Acunto *et al.*, 2020; Ventre and Kolbe, 2020; Khalid *et al.*, 2018; Rasli *et al.*, 2018; Ladkoom and Thanasopon, 2020; Vijai and Nivetha, 2020; Lula *et al.*, 2021; Ahmad and Khan, 2017; eMAG, 2021; ITGalaxy, 2021; Pallant *et al.*, 2020; Guercini *et al.*, 2018; Bourlakis *et al.*, 2018; Tahal, 2014; Ieva and Ziliani, 2017; He *et al.*, 2019). At the same time, this research refutes some aspects found in previous research (Nisarz and Prabhakar, 2017; Phuong and Trang, 2018; Lightner, 2004; Banerjee and Karforma, 2008; Zuo *et al.*, 2013; Siraj *et al.*, 2020; Relas, 2019; Elmorshidy, 2013). Based on these results, the managerial implications for e-commerce companies aiming to uniquely address consumers in Romania and Moldova are related to the decisions of marketing and sales managers who must allocate budgets and resources to improve the eight aspects highlighted above. Also, the e-commerce companies should not allocate resources for the implementation of functionalities such as in-app after sales services, the possibility to cancel an order or the live consultant support feature, because these aspects do not influence the satisfaction of e-commerce consumers in Romania and Moldova.

On the other hand, referring only to Romania, the consumers in this country are sensitive to factors such as the existence of periodic notification system, the reviews from previous customers, the possibility to use different payment methods, the ease of use of the web platform and the product customization feature. These results refute some previous partial research (Nisarz and Prabhakar, 2017; Phuong and Trang, 2018; Kumar and Johari, 2015; Lightner, 2004; Banerjee and Karforma, 2008; Zuo *et al.*, 2013; Siraj *et al.*, 2020; Relas, 2019; Elmorshidy, 2013; Bressolles and Durrieu, 2011; Choi *et al.*, 2019; Consoli, 2017; eMAG, 2021; ITGalaxy, 2021; Tahal, 2014; Ieva and Ziliani, 2017; He *et al.*, 2019). Thus, e-commerce companies that want to focus on the Romanian market do not have to allocate resources for aspects such as in-app after sales services, the live consultant support, price comparison tools or loyalty programs.

With regard to Moldova consumers, our research highlighted the following factors influencing e-commerce satisfaction: the existence of the periodic notification system, the existence of live chat support, the price comparison tools, the existence of previous reviews, the various payment methods, the product customization features and loyalty programs. As a result of the research results, the recommendation for marketing managers is to focus on these issues and not allocate resources for in-app after sales services, the possibility to cancel an order and the ease of use of the web platform.

5. Conclusions

The need to analyze the connections between the level of satisfaction of e-commerce users and various factors of influence is justified by the fact that e-commerce is an area which has grown significantly in the last decade. Moreover, the beneficiaries of e-commerce are different in terms of behavior from one country to another, as well as in terms of profile. Statistics show that the number of e-commerce users is constantly growing in both Romania and Moldova, which means that marketing managers must be very attentive to the individual and group needs of consumers and to specific stimuli that can improve overall satisfaction of customers.

The research conducted and the results obtained show that there is a differentiation of the factors that influence the level of satisfaction of e-commerce users. Thus, the following factors are significant for the Romanian users: the periodic notification system, the existence of previous reviews, the various methods of payments, the ease of use of the web platform and the possibility of product customization. Moldovan e-commerce customers are sensitive to the following factors: the periodic notification system, the existence of live support consultant, the existence of a price comparison tool, the existence of reviews from previous customers, the various methods of payments, the open box delivery option, the possibility of product customization and the existence of loyalty programs.

Regarding *the limitations of the research*, they can be identified based on the used methodology. The current research is limited in terms of population studied to only two countries: Romania and Moldova. Even if Romania is part of the European Union, unlike Moldova, the authors consider that this is a limitation of the current research. Also, although the study is intended to be exhaustive by analyzing no less than 11 factors influencing the satisfaction generated by e-commerce, it is still limited to this group of representative factors. The fact that the sample of respondents includes only people aged between 18 and 35 is another limitation of the research because these results can be interpreted with scientific precision only for this range. Another limitation has to do with the limited number of demographic variables included herein; for example, this analysis did not include a variable to measure the income level of the respondents.

Although the article has a number of objective limitations, based on the research carried out and the results obtained, at least four *future directions of research* can be identified. The first direction is to include several countries in the analysis so as to obtain a regional picture about the influencing factors of e-commerce customer satisfaction. The second future direction of research involves extending the analysis to other age groups to highlight the differences that manifest themselves by age categories. Another direction for the future is the analysis of the factors influencing e-commerce satisfaction in a broader context of the Internet of things and services and new emerging IT, starting from the framework proposed by Al-Momani *et al.* (2018) and the results obtained by Grubljesic *et al.* (2019). Finally, the fourth direction of research would involve an approach that includes in the analysis many factors influencing the satisfaction generated by e-commerce.

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