

SECTION MANAGEMENT, MARKETING, ECONOMIC,
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ANALYSIS OF THE ONLINE PURCHASE BEHAVIOUR OF
ROMANIANS

**Naiana ȚARCĂ¹, Mirela BUCUREAN², Dinu SASU³, Remus ROȘCA⁴,
Oana SECARĂ⁵**

^{1,2,3,4,5} Faculty of Economics, University of Oradea, Oradea, Romania
ntarca@uoradea.ro

Abstract: *In recent decades, technological development has experienced significant acceleration, and smart devices are now widely available. Romanian e-commerce market, although ahead of countries like Greece, Portugal, Italy or Bulgaria, has still a long way to go before reaching its full potential. The purpose of this paper is to analyse the online shopping behaviour of Romanians. For this, we analyzed statistic data on internet access and online purchases and discussed the findings of an online purchase behaviour survey of 580 Romanian respondents. The main findings of the survey suggest that, while 64 percent of respondents prefer online shopping to the classic non-virtual shopping, the top three risks that worry potential online Romanian buyers are: fake online reviews, uncertain quality of goods, and unreliable match. 5G technologies, ultra-fast smart devices, lack of borders in online commerce are already present, so the future belongs to those who will know how to adapt and anticipate the needs of online shoppers.*

Keywords: *e-business; consumer behaviour; online purchase*

JEL Classification: L81, M21

1. Introduction

Unquestionably, the world we live in is constantly changing. Things we consider commonplace today, were hard to imagine thirty years ago. Widespread access to information, mobile Internet, home and mobile assistant, online shopping or pay by credit card or phone are today part of our day to day life, but probably would have seemed straight out from sci-fi movies three decades ago.

In its relatively short history, Internet has revolutionized the world and the way we live, work and spend our free time. The widespread use and increasing number of people with Internet access has paved the way for new and innovative ways of doing business. The importance of Internet is all the more clearly seen in this

period in which the COVID-19 pandemic has moved many of the daily activities online.

Nowadays, reading product reviews online, ordering food or buying a holiday without leaving home are all ordinary, unspectacular things. But online business development is far from showing signs of slowing down. From business to business or business to consumer models of electronic business to dropshipping and e-government, the landscape of e-business is constantly developing. For example, dropshipping has been the trend in recent years, being considered 'an innovation' that 'can provide superior competitiveness' (Abrudan/Matei/Abrudan 2018). Books, online guides and tutorials that explain how to run a dropshipping business have been published and many shared their dropshipping success stories online.

1. Literature review

In terms of scientific research, in March 2020, there were over 7000 published scientific papers which contain the term e-commerce or e-business in the topic, from all fields of study, in Web of Science Core Collection. Over 2000 of these were published in the field of Computer Science and Information Systems, while about 3500 of the published scientific papers were in the fields of Business, Management and Economics. With a total of 523 papers, 2008 is the year with the most research articles published, while there were only 4 published articles between 1982 and 1997 (according to Web of Science data).

In 2015, Yan, Lee and Lee, in an effort to identify the main concern regarding ecommerce related research published, analyze research papers published from 2000 to 2013 in academic journals included in Web of Science database. The authors have identified 68 terms as main keywords of ecommerce research that were subsequently grouped into three broad categories: technology, management and customer (Yan/Lee/Lee 2015). Moreover, in a research on data from 130 countries, Larosiliere, Carter and Meske (2017) found that the 'technological maturity, public readiness, and information and communication technology law sophistication' have a positive impact on the level of acceptance of social network by individuals in a country.

Several of the research papers published are investigating the correlation between business performance and online presence of a company. For example, Bi, Davison and Smyrniotis show that 'IT resources, strategic IT alignment, market orientation, and business partnerships do contribute significantly and indirectly to SME performance through the development of e-business capability and business process competence'(Bi/Davison/Smyrniotis 2017), while Grefen and Turetken argue that there is a 'shift towards networked business scenarios'(Grefen/Turetken 2017). It is considered that the value creation potential of e-businesses depends on four interdependent dimensions: efficiency, complementarities, lock-in, and novelty (Amit/Zott 2001).

Other papers examine the reasons behind sharing commercial content on social networking platforms (Vilnai-Yavetz/Levina 2018).It is common knowledge that online comments influence consumers' decisions to buy and their perception on a company. More and more companies use social networking platforms to conduct targeted marketing and enterprise reputation management for e-commerce and e-

business. The influential power of a small group of active users could have a major impact on a large number of consumers' decisions to buy and the public's perception (Xu/Guo/Li/Lau/Liao 2012), therefore companies make increasingly more use of different mining methods to identify the groups with the most influential power. While e-commerce is constantly developing, different types of information sources have improved the consumers' online shopping performance. Grip force and eye-tracking sensors are applied to consumers' online reviews search behaviour (Fu/Manogaran/Wu/Cao/Jiang/Yang 2020). Factors affecting customer satisfaction in online shopping are also analyzed. Findings suggest that: 'customer service, information quality, response time, transaction capability, delivery, merchandise attributes, security/privacy, convenient payment method, and price' are all ingredients with a major positive impact on customer satisfaction in online shopping (Alam/Al/Omar/Hussain 2020). Online stores try to capitalize on every existing holiday, and even invent new holidays and events around which to create entire online sales campaigns. Singles' Day is the best example of such a 'holiday'. Singles' Day is an online shopping event that was originated in China and has rapidly grown exceeding the online sales of the Black Friday event. The success of this 'holiday' was analyzed by both practitioners and researchers. In a paper published in 2019, Chen and Li conducted a research on Chinese consumers and found out that 'online shopping festival atmosphere and Confucian values affect purchase intention', emphasizing the role of online shopping festival atmosphere incentives and cultural values on the intention of making an online purchase (Chen/Li 2019).

2. Methodology

The purpose of this paper is to analyse the online shopping behaviour of Romanians. For this purpose, we underwent the following steps:

- Statistics analysis and trends understanding. Within this stage, we examined the statistics on internet access and online purchases, we analysed the evolution on a 12 years' timeframe and we tested possible correlations.
- Online purchase behaviour survey. Within this stage, we discussed the findings of the survey conducted on online shopping behaviour of Romanian consumers.

The two steps taken are meant to complement each other and, together, provide a more complete picture of the perception of online shopping in Romania.

Statistics analysis and trends understanding

In recent decades, technological development has experienced significant acceleration, and smart devices are now widely available. As is the case for Romania, where in 2008 under 30 percent of all households had internet access, while by 2020, over 70 percent of all households had an internet connection. According to The National Authority for Management and Regulation in Communications (ANCOM), by the end of June 2019 there were 5.1 millions of cable internet connections with a monthly average traffic of 27 GB and 19.6 millions of mobile internet connections, with an average of 3.38 GB /month (ANCOM 2019).

The increase in the share of households that have access to the Internet has, as expected, increased the volume of online shopping. A study by Kantar Millward Brown in 2019 shows that 38 percent of Romanians have made online purchases at least once in the previous 12 months, placing Romania ahead of other countries such as Greece, Portugal, Italy, Croatia or Bulgaria, but far below the UK, Denmark and Germany, countries with the highest level of online shopping in Europe. Still, in Romania, online purchases worth about 3.5 billion Euros were made in 2018 (Pavel 2019).

Figure 1 illustrates the situation of online purchases, by categories of goods in 2008, respectively 2020, while Figure 2 illustrates the evolution of online purchases, by categories of goods.

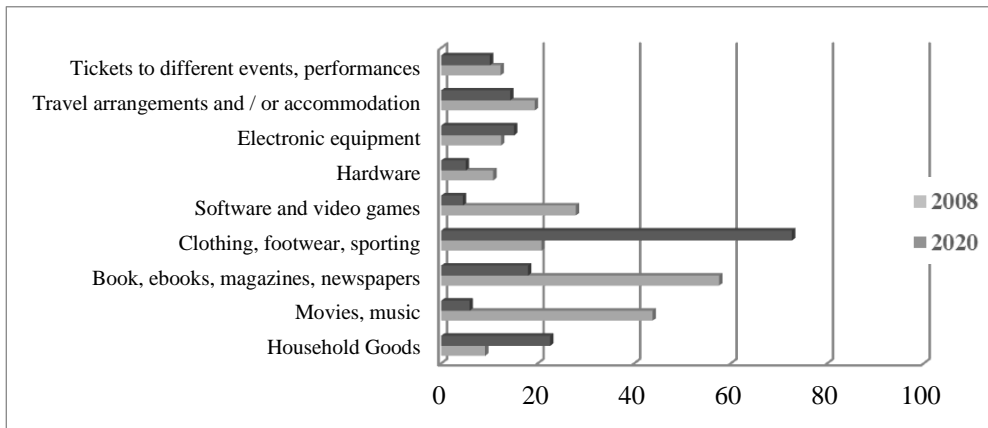


Figure1. Share of people who made online purchases: comparison 2008-2020 - based on data from theNational Institute for Statistics – Romania

Figures no 1 and 2 do not illustrate the evolution of online shopping in absolute number, but in percentage. According to figures 2 the most spectacular growth is registered in the Clothing, footwear, sporting category. Household goods and electronic equipment are the only other two categories that have recorded increases in the total share of sales for the time period considered.

For goods in the movies, music, software and video games category, for which the share of buyers has been declining, a possible explanation refers to the ease with which goods in this category can be pirated, as Romania is one of the countries with the most piracy site visits per internet user (Wong 2017).

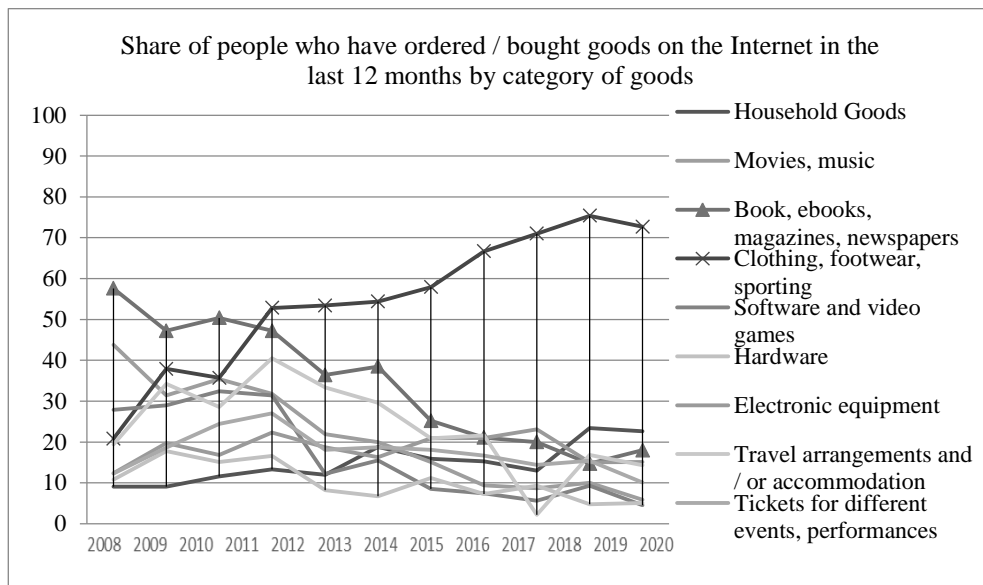


Figure2. Evolution of the share of people who made online purchases - based on data from the National Institute for Statistics – Romania

As mentioned above, the largest increase in the share of online shopping was registered in the Clothing, footwear, and sporting category. Thus, it seems that the more people have Internet access, the more purchases in the Clothing, footwear and sporting category. Not the same can be said about online shopping in other categories of goods. For example, for Books, eBooks, magazines, newspapers category the number of buyers remained almost constant in the last decade. But, when comparing their share to the increasing volume of online shopping and the increasing share of people with Internet access, this category seems to be declining. One could say that there are now new buyers for this category of goods.

To illustrate the connection between the share of online shopping in the clothing, footwear and sporting category and the share of homes with Internet access, we made use of the point cloud. The point cloud method is used to identify the shape of the regression function.

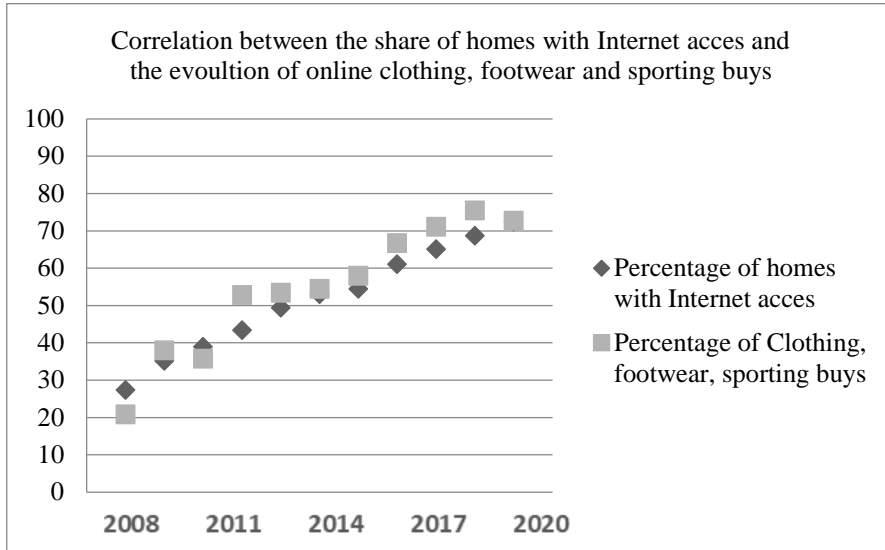


Figure 3. Point cloud to test the possible correlation between the share of homes with Internet access and the evolution of online clothing, footwear and sporting buys

Given the way in which the points are grouped, we can say that between the analyzed variables there is a strong, direct and positive correlation, the Figure indicating a simple linear function. Next, we calculated the correlation coefficient between the two variables. The correlation coefficient can be calculated in various ways, there are calculation formulas that can be used, such as the one below.

$$R_{Y/X}^2 = \sqrt{\frac{\sum_{i=1}^T (y_i^2 - \bar{Y})^2}{\sum_{i=1}^T (y_i - \bar{Y})^2}}$$

For calculating the correlation coefficient between the share of homes with Internet access and the evolution of online clothing, footwear and sporting buys, we used an Excel data analysis feature (see Table 1). The correlation coefficient obtained is 0.97, which proves the existence of a strong positive link between the two variables.

Table 1. Correlation Coefficient

	Percentage of homes with Internet access	Percentage of Clothing, footwear, sporting buys
Percentage of homes with Internet access	1	
Percentage of Clothing, footwear, sporting buys	0.972649187	1

For a better view on the analyzed variables (i.e. online purchases categories), we used excel to study the descriptive statistics of the main online purchases categories (see Table 2). Since the data are shown for each category in Table2, we will present here only some of the main aspects related to these descriptive statistics.

Table 2. Descriptive statistics of main online purchases categories

<i>Household Goods</i>		<i>Movies, music</i>		<i>Book, e-books, magazines, newspapers</i>	
<i>Mean</i>	14.91818	<i>Mean</i>	21.21818	<i>Mean</i>	34.20909
<i>Standard Error</i>	1.479116	<i>Standard Error</i>	3.841113	<i>Standard Error</i>	4.540994
<i>Median</i>	13.3	<i>Median</i>	20	<i>Median</i>	36.4
<i>Standard Deviation</i>	4.905674	<i>Standard Deviation</i>	12.73953	<i>Standard Deviation</i>	15.06077
<i>Sample Variance</i>	24.06564	<i>Sample Variance</i>	162.2956	<i>Sample Variance</i>	226.8269
<i>Kurtosis</i>	-0.56058	<i>Kurtosis</i>	-1.10317	<i>Kurtosis</i>	-1.61473
<i>Skewness</i>	0.679562	<i>Skewness</i>	0.458673	<i>Skewness</i>	0.142392
<i>Range</i>	14.3	<i>Range</i>	37.9	<i>Range</i>	42.9
<i>Minimum</i>	9.1	<i>Minimum</i>	5.9	<i>Minimum</i>	14.7
<i>Maximum</i>	23.4	<i>Maximum</i>	43.8	<i>Maximum</i>	57.6
<i>Clothing, footwear, sporting</i>		<i>Software and video games</i>		<i>Hardware</i>	
<i>Mean</i>	54.42727	<i>Mean</i>	19.16364	<i>Mean</i>	10.26364
<i>Standard Error</i>	5.195664	<i>Standard Error</i>	3.368228	<i>Standard Error</i>	1.364103
<i>Median</i>	54.4	<i>Median</i>	15.5	<i>Median</i>	9.3
<i>Standard Deviation</i>	17.23207	<i>Standard Deviation</i>	11.17115	<i>Standard Deviation</i>	4.524218
<i>Sample Variance</i>	296.9442	<i>Sample Variance</i>	124.7945	<i>Sample Variance</i>	20.46855
<i>Kurtosis</i>	-0.25878	<i>Kurtosis</i>	-2.16372	<i>Kurtosis</i>	-0.99621
<i>Skewness</i>	-0.65315	<i>Skewness</i>	0.088617	<i>Skewness</i>	0.547465
<i>Range</i>	54.6	<i>Range</i>	26.8	<i>Range</i>	13
<i>Minimum</i>	20.8	<i>Minimum</i>	5.6	<i>Minimum</i>	4.8
<i>Maximum</i>	75.4	<i>Maximum</i>	32.4	<i>Maximum</i>	17.8
<i>Electronic equipment</i>		<i>Travel arrangements and / or accommodation</i>		<i>Tickets to different events, performances</i>	
<i>Mean</i>	18.3	<i>Mean</i>	23.77273	<i>Mean</i>	17.61818
<i>Standard Error</i>	1.033089	<i>Standard Error</i>	3.267334	<i>Standard Error</i>	1.469497

Median	18.7	Median	21.6	Median	18.1
Standard Deviation	3.426368	Standard Deviation	10.83652	Standard Deviation	4.87377
Sample Variance	11.74	Sample Variance	117.4302	Sample Variance	23.75364
Kurtosis	-1.04637	Kurtosis	0.192034	Kurtosis	0.379663
Skewness	-0.21512	Skewness	-0.41583	Skewness	0.548711
Range	10.7	Range	38.3	Range	16.9
Minimum	12.4	Minimum	2.2	Minimum	10.1
Maximum	23.1	Maximum	40.5	Maximum	27

The largest Mean (which is defined as the average of a data set) is recorded, as expected, for the Clothing, footwear, and sporting category, while the lowest mean is recorded for the Hardware category. Standard deviation (which measures the dispersion of a dataset relative to its mean) is highest for Books, e-books, magazines and newspapers category and for the Clothing, footwear, and sporting category, and lowest for the Electronic equipment category. Regarding dataset symmetry, Software and video games category (with a Skewness of 0.08) seems to be the most symmetric dataset, while Household goods and Clothing, footwear, sporting categories with Skewness of 0.67 and -0.65 are moderately skewed. The largest Range (i.e. the difference between maximum and minimum value) are recorded for: Clothing, footwear, sporting (54.6), Book, e-books, magazines, newspapers (42.9), and Travel arrangements and / or accommodation (38.3).

The attitude towards online shopping. Results and discussion

To analyze the attitude of individuals towards online shopping, we conducted a quantitative survey, based on an inquiry, using an online questionnaire. The questionnaire comprises 19 questions, 17 closed-ended questions, 2 open-ended questions. The population studied consists of individuals with Internet access. The questionnaire was distributed through a social network. The questionnaire was completed by 580 respondents, of whom 18 percent are from the rural area and 82 percent from the urban area. The distribution by age and gender of the respondents is shown in Figure 4.

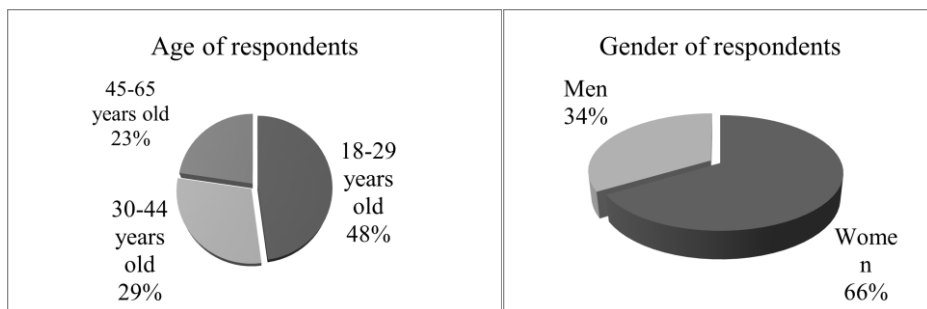


Figure 4. Distribution by age and gender of respondents

Out of the total of 580 respondents 79 percent admit to making online purchases at least once in their lifetime. The percentage is higher for the 18 to 29 age group, where 96 percent of respondents have made at least one online purchase in their lifetime, as opposed to only 44 percent of respondents in the 45 to 65 age group.

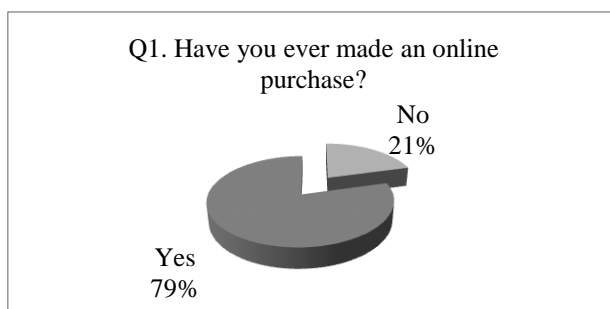


Figure 5. Share of respondents who made an online purchase

The main aspects associated with online shopping (see Figure 6) refer to:

- ease of online shopping;
- home delivery/shopping from home;
- convenience.

These could be considered incentives or benefits that drive people to buy from home and enjoying shopping without being necessary to go out. All online businesses should identify what are the consumers' motives to buy. Different target markets could mean different reasons to go online.

Issues related to online shopping security and other uncertainties rank four and five in the top of online shopping aspects listed by respondents (see Figure 6). Only 4 percent of respondents think of 'internet' when asked about online shopping. Internet has become such a trivial thing that most people do not realize that Internet access is a sine qua non for shopping online.



Figure 6. Aspects associated by respondents with online shopping

When asked if familiar with online business terms, most of the respondents answered that they are familiar with the terms 'e-commerce' and 'shopping cart', but less familiar with terms like SEO, drop shipping and pay-per-click, which are not in direct correlation with their status of online buyers (see Figure 7).

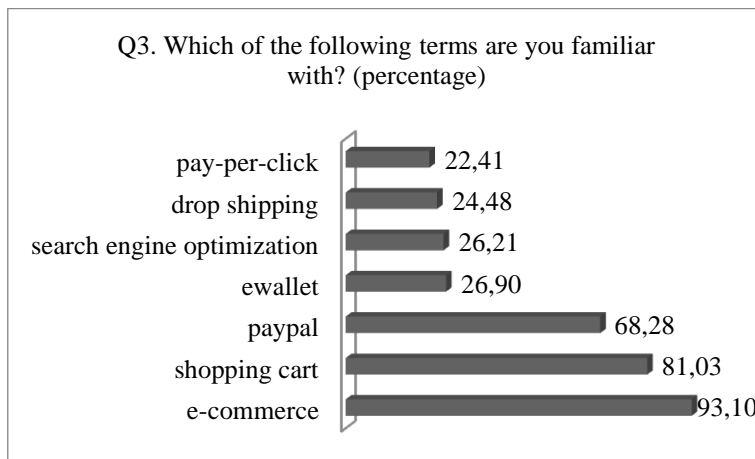


Figure 7. Specific ecommerce terms

Although, 71 percent of the respondents are comfortable in making online purchases, 28 percent still fear the online purchases procedure. Most of the respondents stating they don't feel comfortable making online purchases live in rural areas. This may be explained by the fact that Internet access has spread to a lesser extent and more slowly in rural areas (see Figure 8).

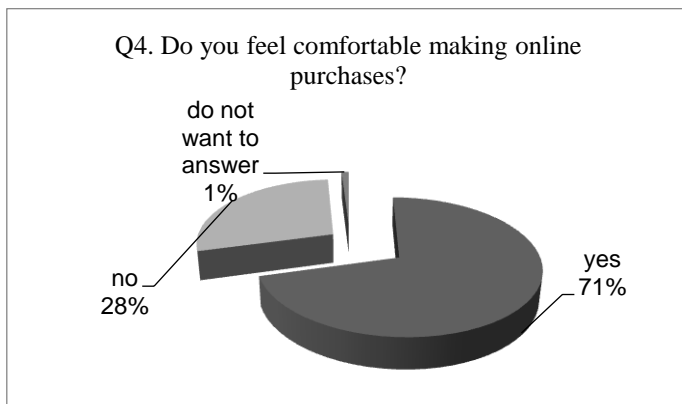
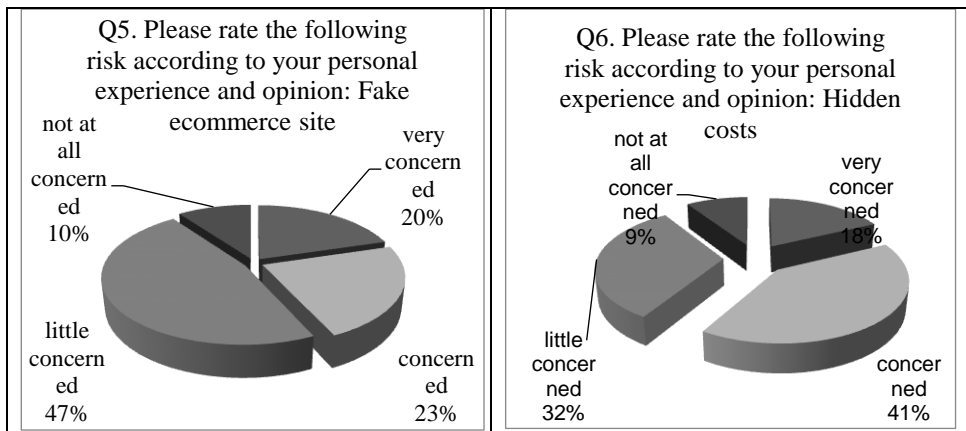


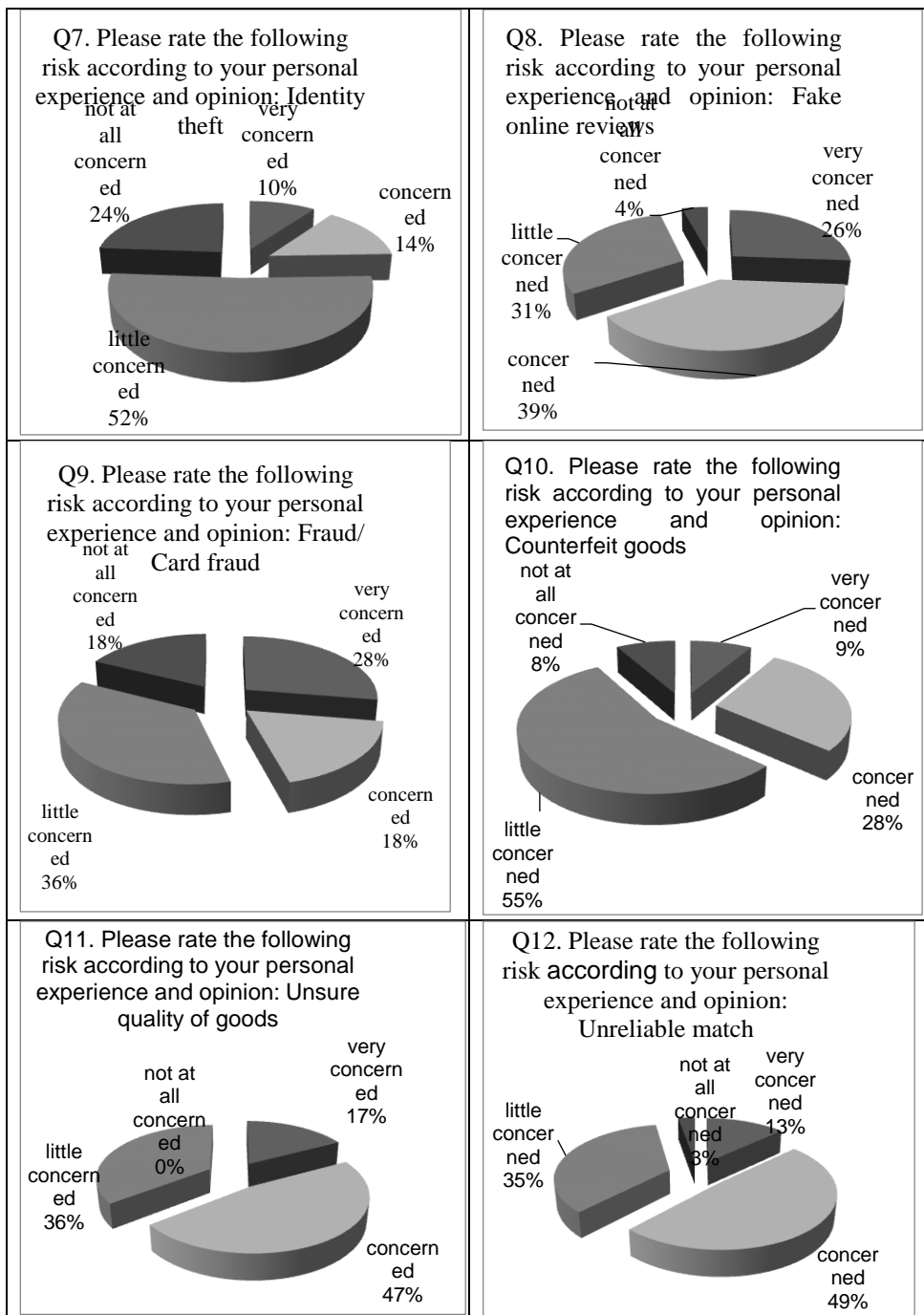
Figure 8. Illustration of the percentage of respondents who feel comfortable in making online purchases

Respondents were asked to rate 10 possible risks of online purchases according to their personal experience and beliefs. These are top three risks that worry potential online buyers:

- fake online reviews
- uncertain quality of goods
- unreliable match

The risk of fake online reviews is perceived by 65 percent of respondents. Trust is essential as online comments influence consumers' decisions to buy as well as the companies' public image. The same can be said about the second most feared risk associated with online shopping: uncertain quality of goods, a risk perceived by 64 percent of respondents.





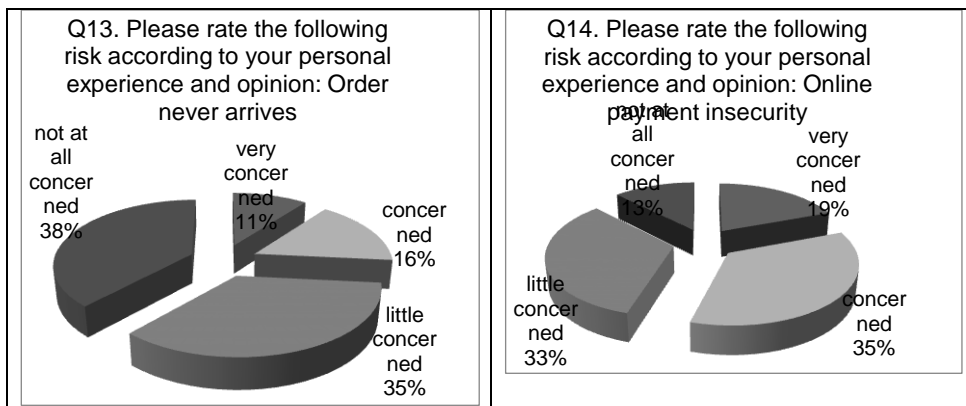


Figure 9. a -j. Respondents' views on risks associated with online purchases

On the other hand, identity theft, order never arriving, counterfeit goods are the lowest ranking risks associated with online shopping. Still, these are risks perceived by over 30 percent of respondents, which could mean that Romanian consumers are not very comfortable in making online purchases. Most likely the lack of confidence is a feature of the Romanian culture, having its origin in the high level of generalized corruption and in the aftermath of communism.

To fight the perceived risks, online sellers should think of a set of measures to reduce the risks perceived by buyers. Easy and cost free return policy could make the risks associated with online purchases seem more insignificant. Other associated risks should not be neglected. For example, 59 percent of respondents fear the possible hidden costs of their online purchase.

Of the 580 respondents, 64 percent would rather opt for online shopping. Related to the preference for online shopping, there is no significant difference between genders, but there are significant differences in relation to the age category of the respondents. 84 percent of the respondents in the 45 to 65 age group would rather shop in traditional brick and mortar stores, while only 14 percent of the respondents in the 18 to 29 age group would do the same. This is understandable if we take into account these two factors: a) the younger generation had access to technology and the internet from an early age and b) the older adults have a higher degree of distrust in technology and financial institutions.

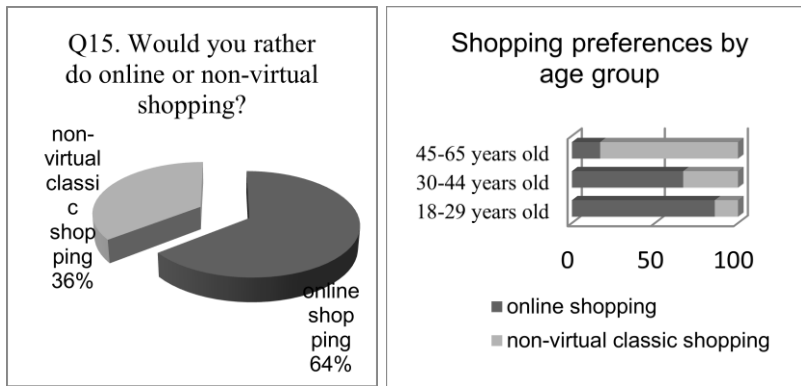


Figure 10. Expressed preferences for online shopping vs. classic shopping

58 percent of women respondents offered home delivery as one of the top reason to choose online shopping, while among men only 35 percent think home delivery is one of the benefits of online shopping. There is also a significant difference between women and men responses regarding the benefit of time saving: while 73 percent of women think time saving is an important advantage of online shopping, only 55 percent of men agree. Easier price comparison seems to be more important for men respondents if we consider the fact that 72 percent of men and only 16 percent of women listed this feature as one of the main reason why they choose online shopping over traditional, brick and mortar shopping stores (Figure 11).

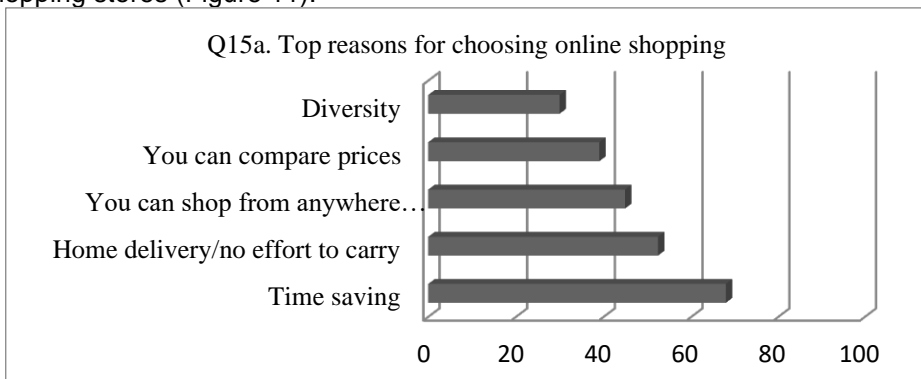


Figure 11. Top reasons for choosing online shopping

The main reason offered for choosing brick and mortar stores refers to the possibility to touch and try on the products and be in control. This has been expressed, in one form or another, unanimously by the respondents who prefer classic shopping. It is worth mentioning again that 84 percent of the respondents in the 45 to 65 age group show a preference towards traditional brick and mortar stores.

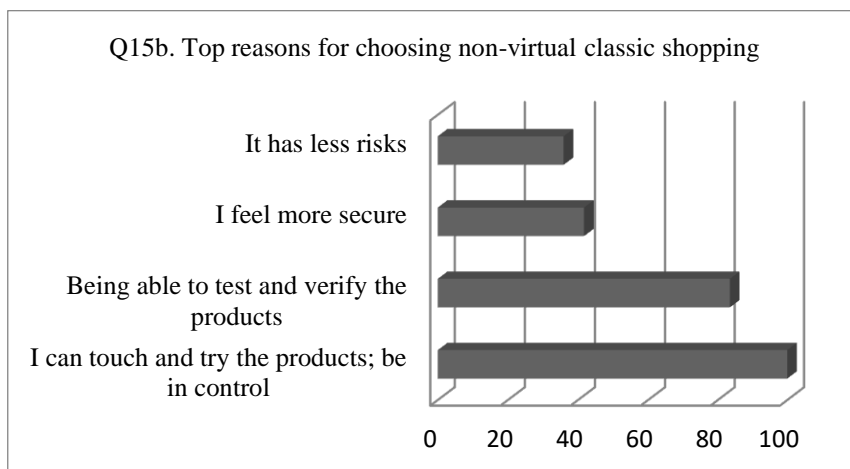


Figure 12. Top reasons for choosing classic shopping

Of course, there are certain goods for which classic purchase is more comfortable for Romanian buyers, especially when it comes to testing and verifying, or even trying on the product one desires to buy. But, more easily to follow return policies could shift the buyers' perception and could tip the balance in favour of online shopping.

Research limitations

- Due to the fact that the questionnaire was distributed on a social network, the unregistered population was excluded
- Although the respondents come from all areas of Romania, approximately 60 percent live in the western part of Romania.

Taking into account the two limitations expressed above, the research results cannot be extrapolated to the entire Romanian population.

3. Concluding remarks

The purpose of this paper was to analyse the online shopping behaviour of Romanians. The analysis was done in two stages: 1. Statistics analysis and trends understanding and 2. Online purchase behaviour survey. The two stages complemented each other in order to provide an overview on the perception of online shopping in Romania.

Although 64 percent of the 580 participants in our survey prefer online shopping (especially the young adults in our survey), many of them associate certain risks with online purchases, which could mean that Romanian consumers are not very comfortable in making online purchases. Most likely the lack of confidence regarding online shopping is part of a generalized distrust which characterizes the Romanian culture, having its origin in the high level of widespread corruption and in the aftermath of communism.

Romania online shopping market is not yet mature. Online business can grow and will grow in the coming period, but there is still a long way to go before Romanian e-commerce market will reach its full potential. Nonetheless, Romania is ahead of countries like Greece, Italy, Croatia or Bulgaria, but far behind China

and the United States, which are the largest e-commerce markets in the world. Of the two, China is the biggest and most dynamic e-commerce market in the world, with twice as many money spent online than the US, which are the second largest global market (Kantar 2020).

In China, mobile phone purchases have been driven by large socialization ecosystems, which have their own integrated e-commerce and digital payment platforms, making shopping easier. The records of this country regarding online shopping during various commercial events, such as Singles Day, make us realize that Romania is very far from the online presence of China or the United States. Applications that offer video ads connected to online stores that allow consumers to discuss and shop at the same time and complete their purchase without leaving the app may seem futuristic to customers in Romania, where there are still individuals under the age of 45 who use bank cards only to withdraw their salary on pay-day. Online giants such as Amazon, Google, Pinterest and Facebook bring content and commerce in one place using shoppable ads. Amazon introduced Amazon Live in 2019, as did other platforms like Taobao and Alibaba (Kantar 2020). Beyond mobile, a generation of shoppable TVs is about to enter the market, considering LG plans to use Augmented Reality (AR) TVs which 'allows viewers to immediately purchase products seen on their favorite TV programs' (Careless 2020). It looks like we will see many e-commerce and social media platforms, online and mobile video channels, and even TV, that will compete to keep up with the ever changing e-commerce landscape in the near future (Kantar 2020).

Given the large number of mobile Internet users, online stores need to adapt and optimize their mobile access pages to reach all potential customers. With the confluence of information technology era and the progressively aging society, the share of older adults that use the internet is growing at a substantial rate (Soh et al. 2020), becoming a significant potential target market for e-commerce. 5G technologies, ultra-fast smart devices, lack of borders in online commerce are already present, so the future belongs to those who will know how to adapt and anticipate the needs of online shoppers. What lies ahead? Only time will tell.

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