

Applying TAM to Study Online Shopping Adoption Among Youth in the Republic of Macedonia

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Abstract. The purpose of the paper is to analyze factors that determine online shopping adoption among young people in the Republic of Macedonia. Online shopping is gaining popularity especially among youth in the Republic of Macedonia. It has been recognized in general that youth are strongly representative sample of today's online population. This especially counts to online shoppers in our country. The proposed research framework is TAM based, extended with relevant constructs that are essential for online shopping– trust, website usability and customer service. They are particularly relevant determinants for the Republic of Macedonia having in mind the size of the market, underdeveloped delivery channels, and inability to use online payment, customs barriers etc. as predominant factors that can influence consumers final decision to shop online. Significance of the factors included in our extended TAM model is tested using regression analysis. From the results, all investigated factors are proven to be significant. For further research, moderating effects of demographic factors can be investigated as may contribute to deeper understanding of consumers' attitudinal intention to shop online. Also, computer anxiety and web irritation can be observed as factors influencing behavior of online shoppers.

Keywords: TAM, online shopping, Republic of Macedonia

1 Introduction

Online shopping has become increasingly popular phenomenon worldwide. There are different definitions that are explaining its essence, process and/or scope. However, all of the definitions can be sublimated in the following one – online shopping is the act (or the whole process) of purchasing products or services over the Internet. In this manner, it can be added – using a web browser. Online selling is term that is used as well. Wider meaning has the term electronic commerce, commonly known as e-commerce. E-commerce is a type of industry where buying and selling of product or service is conducted over electronic systems such as the Internet and other computer networks. In our paper we are focused only on the second dimension – the shopping side or the customer side of online shopping. The selling side is out of the scope of this research, although they are like two flips of a coin - buying and selling. The history of online shopping has started in 1979 with the invention of videotext by Michael Aldrich who gave the “concept of teleshopping” (today online shopping) which revolutionized the way businesses happen. In the USA online shopping was launched the same year with the services like The Source and CompuServe. In 1987 the offshoot of CompuServe, Swreg started for then software industry people where they could sell their product using “Merchant account”. In the beginning of nineties, the invention of World Wide Web by Tim Berners-Lee fuelled the online shopping boom. Netscape browser – Navigator and invention of the SSL encryption for secure transaction enabled several companies to embrace the possibilities (Pizza Hut, Amazon.com, EBay). After the dot com crashed, online shops were at first commodity-specific. Now, there are online shops that are integrators, but commodity specific shops are present as well. The invention of

PayPal and its wide spread usage and the stable growth of e-commerce in the last two decades are solid foundations for the future of online shopping (Kaur and Kharoud, 2015).

In order to explain the importance of the idea of the paper, only several indicators and trends will be presented. Although B2C e-commerce is often used synonymously with online shopping or online retail, it also spans growing categories such as paid online services or paid content.

The B2C sales worldwide for 2017 are expected to reach \$2.14 trillion and \$2.36 trillion in 2018. eMarketer expects retail e-commerce sales to increase to \$4.058 trillion in 2020, making up 14.6% of total retail spending that year (eMarketer.com).

The share of the e-commerce in the GDP is 3.11% on the global level in 2015 (B2C Global Economic Report, p.14) and the growth rate 2016/2015 is 17.5% which is a slight decline of the growth rate of 19.9% in 2015/2014 (B2C Global Economic Report, p.18). In the category of B2C e-commerce sales, China and the United States are clearly at the top, so in 2015, the Chinese in total spent \$766.5 billion online, while the American B2C e-commerce turnover amounted to \$595.1 billion (B2C Global Economic Report, p.20). In the UK, the average e-consumer spent \$4,018 online on goods and/or services, which is considerably more than in other countries (B2C Global Economic Report, p.22). Asia-Pacific will remain the world's largest retail e-commerce market throughout the forecast period, with sales expected to top \$1 trillion in 2016 and more than double to \$2.725 trillion by 2020. The region will also see the fastest rise in retail e-commerce sales, climbing 31.5% in 2017 (statista.com). Expanding middle classes, greater mobile and internet penetration, growing competition of e-commerce players and improving logistics and infrastructure will all fuel e-commerce growth in the region.

With digital buyer penetration expected to edge close to 50 percent of internet users worldwide in 2018, the e-commerce industry is set to evolve and expand. In 2017, this figure is predicted to reach 46.4 percent (statista.com.). Amazon Inc., Wal-Mart Stores Inc. and Apple Inc. are taking the top three spots of the list of biggest e-commerce retailers list by revenue. According to eMarketer, Amazon's e-commerce sales are \$79.3 billion while Wal-Mart has \$13.5 billion and Apple totals \$12 billion. Included in the top 25 list is the share of e-commerce sales to total sales. Amazon's pure e-commerce revenue represents 74.1 percent of total sales while number-two Wal-Mart has e-commerce revenue of just 2.8 percent of its total sales — which indicates that the world's largest retailer has plenty of room to grow online (eMarketer.com). Indeed, analysts and industry consultants have been urging retailers to better leverage their physical stores by also seeing them as warehouses from which goods can be shipped (<http://wwd.com>). Books (68% bought online), electronics (67% bought online) and office supplies (51% bought online) are leading products for online shoppers in USA (Walker Sands, 2016, p.11).

The Global Retail E-commerce Index is published every year by global management consulting firm A.T.Kearney and contains the top countries in terms of e-commerce performance. It ranks countries according four distinct measurements: online market size (40%) consumer behaviour (20%), growth potential (20%) and infrastructure (20%). According to the Global Retail E-commerce Index for 2016, the USA is still leading followed by China, United Kingdom, Japan and Germany (The Global Retail E-commerce Index, 2016). For frequent e-shoppers in USA (more than once per week) free shipping, one day shipping and free returns are the main purchase drivers in 2016 (Walker Sands, 2016).

For Europe the facts are as follows: the growth rate of e-commerce for 2016 is 12%, 43% of the population are e-shoppers, the total turnover of e-commerce goods and services is \$565 billion, share of e-commerce in GDP is 2.6%, average spending per e-shopper is 1700 US\$, 56% of total e-commerce are goods and 44% are services (Walker Sands, 2016).

To wrap up this introduction, we will present indicative data for e-commerce in the Republic of Macedonia. Among the age group 15-74, 70% used the Internet in the last three months in 2016 (www.stat.gov.mk). That percentage for pupils and students is almost 100%. There is not significant difference in the usage of the Internet among males (71%) and females (69%), or rural (67%) and urban (72%) population. Of those who used the Internet in the same age group (15-74), only 14.8% used it to buy goods and/or services, but 54% responded that they used it to search information for goods and/or services. Young people (15-24) are using the Internet 100%, but 30% of them used it to shop online in the 2016. The structure of the purchases online among the population (15-74) who uses the Internet to shop online is as follows: clothing and sports equipment 54.7%, consumer electronics and cameras 16.3%, household (domestic) appliances 13.1%, computers 8.3%, hotel accommodation 9.7%, tickets 6.8%, books 6.6% etc. Online entertainment (films, music) was bought online by only 2.2% of the Internet users (www.stat.gov.mk). There is no data for the amounts spent online for shopping and there are problems related to payment and customs legislative. The small size of the market makes it economically not profitable to ship goods in the country, so logistics issues are very important treats.

Online shopping remains in the early stage of development in the Republic of Macedonia having in mind the size of the market, underdeveloped delivery channels, inability to use online payment, customs barriers etc. Therefore, there is no knowledge about the acceptance of online shopping and the factors which influence this behaviour in the country. Customers from all around the world shop online, but the way they perceive and purchase products online widely varies. This study represents the first attempt to clarify determinants of online shopping adoption by young people in the Republic of Macedonia.

2 Literature Review

In the literature of innovative technology adoption there are many approaches that are elaborated and several are widely used by the researchers. These models have their origins in the disciplines of psychology, information systems and sociology and are intended to predict and understand people's intention, behaviour and attitude towards use of a technology. Since online shopping represent ones behavioural act which is dependent on the internet, these models that originate from behavioural psychology and information system research are compatible when analysing different factors that determine the level of online shopping adoption. Theories of adoption of new technologies are in fact explanations of the factors influencing the decision making over adoption and usage of new technologies and therefore they are relevant to explore the adoption of online shopping. It is important to understand the reasons why people accept technologies as this can help in improving the design, evaluation, and prediction of how users will respond to the new technology (Dillon and Morris, 1996).

Davis's technology acceptance model (TAM) is one of the most influential approaches to explain and predict user acceptance of information systems (Davis, 1989). TAM has become one of the most widely used and empirically validated models within information systems research (King and He, 2006). This model (TAM) is based on the Theory of Reasoned Action (TRA) and to some point on the Theory of Planned Behavior as an extension of the TRA proposed by Ajzen (Ajzen and Fishbein, 1980). According to Davis (1989), the goal of TAM is to provide an explanation of the determinants of computer acceptance that is generally capable of explaining user behaviour across a broad range of end-user computing technologies and user populations, while at the same time being both parsimonious and theoretically justified (Davis, Bagozzi and Warshaw, 1989, p. 985). This model is based on the assumption that the major factors influencing intention to use any technology are predicted by perceived usefulness and perceived ease of use (Davis et.al., 1989). The perceived usefulness of a technology increases with perceived ease of use. In the TAM literature, four of the most important constructs that have been constantly used are perceived ease of use, perceived

usefulness, behavioural intention and actual usage behaviour. The more ease of use a user thinks a new technology is, the stronger his or her intention to use the technology; furthermore, the stronger the usage intention, the greater the actual usage behaviour. TAM model is not a general model and it is designed to be applied only to computer usage behavior (Davis, 1989). Therefore, the application of TAM model is appropriate for research purposes while studying adoption of online shopping.

TAM has been applied to different technologies and has been tested in different contexts. TAM is a generic model that can facilitate the explanation of the factors that influence technology acceptance, or in our case online shopping behavior. Perceived usefulness and perceived ease of use are main factors that explain technology acceptance. Since the research regarding user acceptance involves different technologies, in order to determine the acceptance of a specific technology, researchers usually extend the basic TAM with other constructs that are deemed appropriate for the technology being tested (Legris, Ingham and Collette, 2003). In our research, TAM is used because the main advantage of this model is that it can be modified to best suit the purpose of the research and it can be extended by using specific constructs when used with new technologies which is here a case as well.

In the literature there are also other attempts to use TAM (basic or extended) when determining the factors that influence online shopping behaviour. Some of studies in the recent years are employing different combination of factors to explore online shopping adoption in different sample and country (Fayad and Paper, 2015; Ingham, Cadieux and Berrada, 2015; Lim and Ting, 2012; Pantano and Pietro, 2012; Johar and Awalluddin, 2011, Çelik and Veysel, 2011; Ha and Stoel, 2009; Zhou et al., 2007, Chen, Gillenson and Sherrell, 2002 and others).

But, while the recent studies in this research field identified a number of factors that determine the adoption of online shopping based on the original or extended TAM, most of them are generally focused on experience of developed countries. The literature review showed that there is a lack of empirical evidence whether these factors apply to developing countries, as recognised by Ashraf, Thongpapanl and Auh (2014) as well, and especially in the countries of the Balkan region. Aldousar et al, (2016) also recognize this gap and in their study they analyse the online shopping of Malaysian graduate students. In the Balkan region, to our best knowledge, recently only the study of Renko and Popović (2015) explores the consumers' acceptance of electronic retailing using TAM among Croatian consumers. To address this gap, the goal of our research is to investigate the factors affecting online adoption by young people in Macedonia as represent of the developing countries in the region by employing modified TAM.

3 Methodology and results

We decided to use TAM modified while investigating online shopping adoption because this methodology is widely used to analyse one's attitude towards intention to use new technologies since the act of shopping is a behavioural act and online shopping is dependent on internet (technology).

The first construct is *perceived usefulness*. Usefulness is considered to be the most important determinant of attitude towards usage of new technology and was defined by Davis as "the degree to which a person believes that using a particular system would enhance his or her job performance". In order to get the insights for this construct we defined 7 statements (*Online shopping allows me to buy faster and saves me time; Online shopping saves me money; Online shopping makes it easy for me to make shopping decisions (I decide faster); Online shopping offers me more information about products / services compared to the traditional way of shopping (traditional stores); Online shopping provides me to make better deal; Online shopping makes it available for purchase specific products / services; Online shopping allows me to buy products / services that do not exist (cannot be found) in the Republic of Macedonia*). The second construct is *perceived ease of use*. Davis defined this as "the

degree to which a person believes that using a particular system would be free from effort" (Davis, 1989). This construct is measured with six statements (*Most online shopping sites are easy to use; Learning how to shop online is easy; On most websites for online shopping, I easily find the product / service I'm looking for; Online shopping makes it easier to compare products / services from different vendors; If I need help during online shopping I can get it through the website; On most websites for online shopping navigation is simple*). Attitude towards online shopping is important factor because it affects intention to use technology. Attitude is defined as individual's positive or negative feeling about performing the target behaviour (e.g., using a system) (Davis et.al., 1989). In our research attitude is tested using the following seven statements (*Online shopping is more convenient than buying in a traditional store; I buy online and I will continue to buy online in the future even though I cannot experience the product; I have a positive opinion about online shopping; I'm happy when I shop online; I like searching information about products / services on online shopping websites; Online shopping is essential to me; Online shopping is pretty fun and interesting to me*). The previously mentioned constructs are influencing the *intention to online shopping* which is the final goal i.e. dependent variable. It measures the strength of the individual's intention to perform the behavior, specifically used to anticipate a voluntary act (Fishbein and Ajzen, 1975; Sheppard, Hartwick and Warshaw, 1988). It is important to note that it is not the actual usage that is measured, but the behavioral intention to carry out the act. Intention to use i.e. in our case intention to online shopping is measured by the following statements in our questionnaire (*I intend to continue shopping online in the future; I intend to shop online very often; I keep revisiting online shopping websites from which I previously purchased; When I need a product / service, I first look for it in an online store; There is a chance to buy online a product the same with one that I buy in an ordinary store; There is a chance to buy online different product from the one that I buy in an ordinary store; I intend to shop online from websites new to me (that I have not previously used); Mostly, in principle, I prefer to shop online instead of going to a physical store*). These constructs originate from the basic TAM.

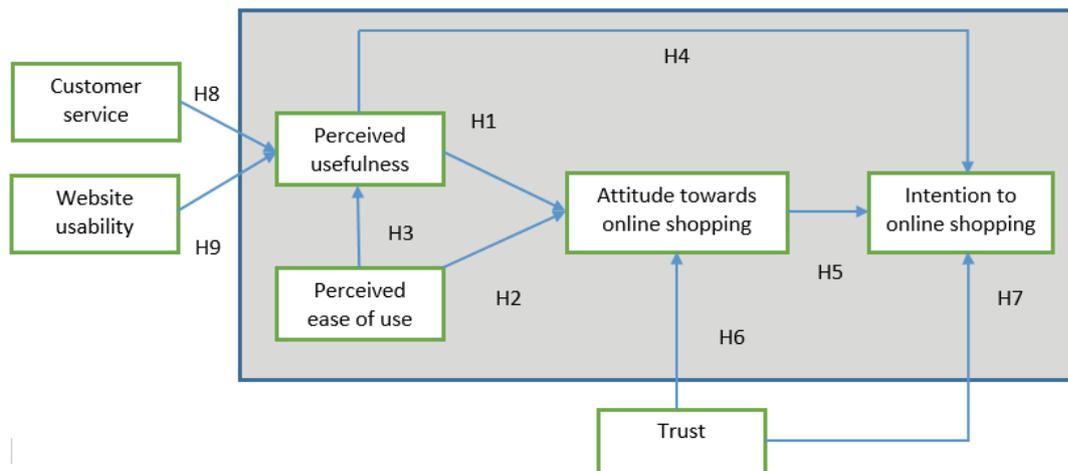
There have been attempts at developing an electronic commerce acceptance model based on specific parts of the TAM (Zhou et al., 2007). In this sense, the research framework proposed in this study is further extended by factors important to the online shopping context in the country. The three constructs that represent the extension of the basic TAM in the research model proposed in this study are *trust, website usability* and *customer services*. Trust plays a vital role in various business relationships. In the context of online shopping i.e. in buyer-seller relationship trust is a key factor because it reduces the element of risk (Walugembe et.al., 2015). According to Jarvenpaa, Tractinsky and Vitale (2000) trust in online shopping context represent consumer's willingness to rely on the seller and take action in circumstances where such action makes the consumer vulnerable to the seller. Trust is particularly critical factor in an online context in which the consumer does not have direct control over the actions of the vendor (Roca, García, and de la Vega, 2009). According to Pavlou, lack of trust in online businesses is one of the main reasons for customers from not engaging in commercial transactions on the web (Pavlou, 2003). In their study Gefen et.al., (2003), provide evidence that online trust is built through (1) a belief that the vendor has nothing to gain by cheating, (2) a belief that there are safety mechanisms built into the web site, and (3) by having a typical interface, (4) one that is, moreover, easy to use (Gefen et.al., 2003). They, (Gefen et.al., 2003), also hypothesized that heightened levels of trust, as specific beliefs about the e-vendor, are also associated with heightened levels of intended use of a business-to-consumer (B2C) web site showing that consumer trust is as important to online commerce as the widely accepted TAM antecedents, perceived usefulness and perceived ease of use. Chiravuri and Nazareth (2001), further, hypothesized that trust positively influences a person's intention to use or purchase. Therefore, the buyer's feelings of trust toward an online seller are an important determinant in considering his/her intentions to use, and usage behaviors related to online activities. Chen et al. (2002, 2004), as well, hypothesized that a consumer's perceived trust in a virtual store positively affects its attitude toward using the e-store. Another research, Butt et.al., (2016), has also suggested that there is a link between trust, behavioral intention, and attitude

toward purchasing. Due to that trust is included in the research model both influencing the attitude towards online shopping and one's intention to online shopping and is measured in our questionnaire by five statements (*I believe that my personal data will be properly protected when buying online; Legal norms protect online buyers in the Republic of Macedonia; Online shopping websites that I use (from which I buy) are reliable (trusted); Online shopping websites that I use (from which I buy) deliver the exact product that I have bought; Online payment is safe on websites that I use*).

In our research model, we have hypothesized the influence of *website usability* and *customer service* on the perceived usefulness defined and measured through six and four statements respectively (*The loading time of the online shopping websites is not long (the site is loading fast); Online shopping websites from where I buy are updated frequently; Online shopping websites from where I buy have enough detailed contact information; Online shopping websites from where I buy enable short and simple registration; Online shopping websites from where I buy have simple search tools; On-line shopping websites have detailed and accurate product information* and for the other construct: *Online shopping websites that I use (buy) provide on-time delivery; Online shopping websites that I use (buy) provide customer support; Online shopping websites that I use/buy provide refund policy; Online shopping websites that I use/buy provide product guarantee*). Although it was not the original focus of the TAM, several studies have examined websites as the focus within a similar technology acceptance framework (Green and Pearson, 2011). Website design, customer service and pricing have been reported as major “retailer characteristics” affecting online buyer satisfaction (Luo et al., 2012). Website quality influences consumers’ perceptions of product quality, and affects online purchase intentions (Sun, Chen, and Huang, 2014) and even continuation intentions (Chawla et al., 2015). A website can be viewed as an information technology (Gefen et al. 2003), thus online purchase intentions can be explained in part by the TAM. Web usability can be defined as the ease of use of a website. Some broad goals of usability are the presentation of information and choices in a clear and concise way, a lack of ambiguity and the placement of important items in appropriate areas (Green, and Pearson, 2011). Barnes and Vidgen (2002) have operationalized the construct ‘usability’ as consumers perceive the website as easy to learn and to operate, easy to navigate, easy to use and the interactive with the website is clear and understandable. The literature review identified several dimensions of website usability, many of which contained similar properties, but labelled with a different name. Different studies (such as Lee and Kozar, 2004; Green and Pearson, 2011 and others) have attempted to develop definitions and measures of the underlying dimensions of website usability. In their study, Green and Pearson (2011) define six separate usability specific variables: design credibility, content, interactivity, navigability, responsiveness, download delay. They were used as a base to define this construct in our study as well. Other studies in this research have examined the correlation between the individual independent variables and online buying intention and have clearly indicated that customer service, trust and reliability can explain much of the variation in online buying intention (Johar and Awalluddin, 2011). Butt et.al., (2016), have also hypothesized that website usability and customer service has a direct positive effect on perceived usefulness. In the context of the socio-economic characteristics of the country and its legislative peculiarities. Macedonian consumers are affected by online customer service and return policy of online websites (e-vendors). Having in mind the current level of e-commerce adoption in the Republic of Macedonia, in order to change consumers’ perception to e-stores i.e. to online shopping, online retailers need to maximize efforts in doing promotion and performing good customer services in order to raise their interest in online shopping.

Based on the discussion above, the proposed research model is presented in Figure 1 and the following research hypothesis are set.

Figure 1: The research model (TAM based)



Hypothesis 1: Perceived usefulness of online shopping has a direct positive effect on attitude towards online shopping.

Hypothesis 2: Perceived ease of use has a direct positive effect on one's attitude towards online shopping.

Hypothesis 3: Perceived ease of use of an online shopping will positively influence perceived usefulness of online shopping.

Hypothesis 4: Perceived usefulness of online shopping has a direct positive effect on intention to online shopping.

Hypothesis 5: Attitude towards online shopping will positively influence one's intention to online shopping.

Hypothesis 6: High perceived trust on an online shopping will positively influence the attitude towards online shopping.

Hypothesis 7: High perceived trust will lead to increased intention to online shopping.

Hypothesis 8: Customer service will positively influence perceived usefulness of online shopping.

Hypothesis 9: Website usability will positively influence perceived usefulness of online shopping.

3.1 Demographics

For the purpose of this research i.e. to analyse the factors that determine the intention to online shopping among youth in the Republic of Macedonia, a survey was performed based on the previously prepared questionnaire. Regarding the structure of the questionnaire, it consists of eight parts. The questions in the first part (A) refer to the demographic characteristics of the sample. All other parts (from B to H) comprise questions regarding the factors that define our research model; for which we assume influence the actual usage i.e. ones intention to online shopping. A five point Likert scale was used. The research was conducted during the period from January 2017 to April 2017. The total number of received answers was 360, but after the filtering of the data, 30 questionnaires were excluded from further analysis due to the missing data (more than 10%), low standard deviation in answers, and more than one answer in the fields where three possible options were offered. (Hair, 2010). In the Table 1 the demographic characteristics of the sample are presented.

Table 1: Demographic profile of respondents

| Demographics | Categories | Frequency | Percentage (%) |
|--|------------------------------|-----------|----------------|
| Gender | Male | 124 | 38 |
| | Female | 206 | 62 |
| Age | 18-24 | 312 | 95 |
| | above 24-35 | 18 | 5 |
| Education | High school | 284 | 86 |
| | Bachelor | 46 | 14 |
| Background | Student | 314 | 95 |
| | Employed | 16 | 5 |
| Citizenship | Skopje (capital) | 179 | 54 |
| | Other | 151 | 46 |
| Type of device used for online shopping | PC (desktop, laptop, tablet) | 272 | 82 |
| | Mobile phone (smartphone) | 58 | 18 |
| Frequency of online shopping (how often one shop online) | At least once a week | 11 | 3 |
| | At least once a month | 85 | 26 |
| | At least once in six months | 142 | 43 |
| | At least once a year | 92 | 28 |

From the demographic structures of the sample it can be concluded that most of the respondents are students and they are predominantly using computers to shop online. Concerning the frequency of shopping online, most of them buy online at least once in six months. Only 3% of the respondents are frequent shoppers and they buy things online once a week. These results are still not comparable with the frequency of online shopping of the leading countries. The overall level of socio-economic development of the country is reflected in the fact that young people are not buying online that often.

From the analysis of the data young people mostly bought online tickets and traveling arrangements. Videogames and apparel are popular items to shop online as well. Books, music and food according our sample is not bought online that much.

3.2 Descriptive statistics

Simple descriptive statistics was performed and the results are presented in Table 2. The variable web site usability got the highest mean which is indicator that this variable is important for online shoppers.

Table 2: Descriptive analysis

| Variables | Mean | Standard deviation |
|----------------------------------|------|--------------------|
| Perceived usefulness | 3.87 | 0.589 |
| Perceived ease of use | 4.01 | 0.569 |
| Attitude towards online shopping | 3.49 | 0.656 |
| Intention to online shopping | 3.47 | 0.667 |
| Trust | 3.56 | 0.751 |
| Customer service | 3.48 | 0.794 |
| Website usability | 4.06 | 0.569 |

3.3 Reliability analysis

Cronbach's alpha is an index of reliability associated with the variation accounted for by the true score of the "underlying construct." Construct is the hypothetical variable that is being measured. Before testing the hypothesis set based on the proposed research model, we performed a validity and reliability analysis. For the data sets of the constructs, Cronbach's alpha as a measure of internal consistency for all constructs is higher than 0.75, except for the construct *Perceived Usefulness* (0.69) which is below generally accepted level 0.70. We decided to take it into consideration for further analysis since in the literature (Chakrapani, 2004) those values are also considered as satisfactory.

Table 3: Reliability analysis

| Variables | Number of items | Cronbach's Alpha |
|----------------------------------|-----------------|------------------|
| Perceived usefulness | 7 | 0.69 |
| Perceived ease of use | 6 | 0.77 |
| Attitude towards online shopping | 7 | 0.78 |
| Intention to online shopping | 8 | 0.77 |
| Trust | 5 | 0.79 |
| Customer service | 4 | 0.75 |
| Website usability | 6 | 0.80 |

Therefore, from the results for the calculated Cronbach's alpha (Table 3) we decide to proceed with further analysis using all items for the constructs as derivative variables that are intended to be used for subsequent predictive analyses.

3.4 Correlation and regression analysis

A correlation analysis was performed based on each of the constructs defined in the research model. The results of the correlation analysis are given in the Table 4 below. All coefficients proved to be significant.

Table 4: Pearson correlation matrix of study variables

| | Perceived usefulness | Perceived ease of use | Attitude towards online shopping | Intention to online shopping | Trust | Customer service | Website usability |
|----------------------------------|----------------------|-----------------------|----------------------------------|------------------------------|-------|------------------|-------------------|
| Perceived usefulness | 1 | 0.454 | 0.488 | 0.465 | 0.383 | 0.418 | 0.283 |
| Perceived ease of use | | 1 | 0.445 | 0.345 | 0.385 | 0.385 | 0.508 |
| Attitude towards online shopping | | | 1 | 0.662 | 0.481 | 0.397 | 0.319 |
| Intention to online shopping | | | | 1 | 0.562 | 0.435 | 0.276 |
| Trust | | | | | 1 | 0.660 | 0.454 |
| Customer service | | | | | | 1 | 0.528 |
| Website usability | | | | | | | 1 |

As it can be seen from the matrix, there is a significant relationship between the intention to online shopping and the rest of the constructs, although the relationship varies in strength from one construct to other. In the Table 6, we summarize the findings regarding the research hypotheses.

Table 5: Hypothesis testing results from regression analysis

| Hypothesis | Variable | β | Significance value |
|------------|-----------|---------|--------------------|
| <i>H1</i> | PU-ATT | 0.543 | 0.000 |
| <i>H2</i> | PEU-ATT | 0.513 | 0.000 |
| <i>H3</i> | PEU-PU | 0.470 | 0.000 |
| <i>H4</i> | PU-INT | 0.411 | 0.000 |
| <i>H5</i> | ATT-INT | 0.651 | 0.000 |
| <i>H6</i> | TRUST-INT | 0.468 | 0.000 |
| <i>H7</i> | TRUST-ATT | 0.420 | 0.000 |
| <i>H8</i> | CS-PU | 0.311 | 0.000 |
| <i>H9</i> | WU-PU | 0.293 | 0.000 |

All predicted relationships proved to be significant. From the regression analysis and the proved relationships between constructs we can conclude that the modified TAM model that is tested is good representation of real factors influencing online shopping behavior among youth in the Republic of Macedonia.

4 Conclusions

This research represents the first study in this field in the country and one of a few in the region. Hence it could be used as a good base for further research in this scientific area and as a guideline for e-commerce managers and marketers to improve shopping experience and customer service. This research is important from the viewpoint of proving the possibility to use basic/modified TAM model as technology acceptance model for online shopping adoption as well.

The current research on factors that determine e-commerce adoption has been primarily conceptualized and conducted in western developed countries (Ashraf, Thongpapanl and Razzaque 2015; Lawrence and Tar, 2010). However, it has been suggested that implementation of e-commerce in emerging markets cannot be based solely on western experience due to cultural differences, socio-economic peculiarities, legislation, economic development etc. Therefore the results of this research can represent an input in improving the overall experience in online shopping in developing countries and in the region.

Online shopping is fully accepted as *modus vivendi* among youth in the country. All factors proved to be significant predictors of intention to shop online. Basic TAM (extended with three variables – trust, website usability and customer service) can serve as model of explanation of online shopping behavior. The model proved to be appropriate presentation of the current situation.

Another important attribute that has not been studied much in an online shopping context is anxiety. Anxiety although previously included in the model, proved to be insignificant. Computer anxiety among young people in our country is very low. Young people don't have and/or understand the term computer anxiety. We explain that by the widespread use of fast broadband connections, modern devices, nonexistence of language barriers among young people in the country etc. In further research, when extending the sample on older population, it will be included and tested. Survey results proved that young people shop online tickets, air tickets, booking hotels, apparel, smart phones and

computers, and food from sides that offer coupons for grouper discounts. E-commerce managers and marketers can use the findings to improve shopping experience and customer service.

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