COMPARISON OF E-COMMERCE BEHAVIOUR AMONG WOMEN CONSUMERS OF BALKAN AND BALTIC REGIONS

Polychronidou Persefoni[1], Valsamidis Stavros[2], Florou Giannoula[3], Karasavvoglou Anastasios[4]

Kavala Institute of Technology

Abstract: *Nowadays, more and more consumers prefer to make their shopping via Internet. Researchers wish to study the e-commerce behaviour and the factors influencing consumer's attitude while shopping on line. This paper investigates the differences and similarities of women's behaviour toward e-commerce in two culturally different Europe regions; the Balkans and the Baltic regions. Some attributes such as trust in vendor, trust in transactions, language, culture, age or education and their possible impacts on e-commerce use, are examined in this paper. A convenient random sample of 50 women from each region (Greece, Romania, Bulgaria, Lithuania, Estonia and Latvia) was used in order to answer a structured questionnaire including the aforementioned factors. The reply of the respondents was received through e-mail. The responses were analyzed using statistical methods and exploratory data analysis with SPSS software and Chic analysis software, respectively. The results show that there are some significant behaviour differences between the two regions. In particular, women in Baltic use e-commerce more than women in Balkans. Also, it is shown that much more factors such as use of Internet, marital status, education affect the intention to buy online in Baltic than in Balkans.*

Keywords: e-commerce, women, Balkan regions, Baltic regions, data analysis

JEL Classification Codes: D12, O52

1. INTRODUCTION

The use of e-commerce is rapidly increasing. It is of crucial importance to study the behaviour of e-consumers. Women consist of a large group of e-consumers and Internet users and they are interested in a variety of websites and products. The study of women's behaviour towards e-commerce can give for online marketers a better understanding of factors which can influence women intention to buy online.

Some important factors influencing e-consumer behaviour are the following:

Culture: the culture in which an individual exists has an effect on all aspects of life. There is a diversion in different culturally built regions on how they process the overall trust, including how an individual views/uses information technology (Gefen, 2000; Van Slyke, 2010; Kimery and Amirkhalkhali, 2008; Whiteley, 2000).

[1] Adjoined Assistant Professor, polychr@sdo.teikav.edu.gr
[2] Applications Professor
[3] Associate Professor
[4] Professor

Trust and e-commerce (vendor and transactions): Trust becomes a potentially important factor for e-commerce, because trust between parties is most often critical for a successful outcome and to establish a long term business relationship (Van Slyke et al., 2010; Corbitt, Theerasak and Han, 2003; Gefen, 2000; Ramayah and Ignatius, 2005).
Trust in vendors: The trustworthiness of online vendors is an actual factor, because consumers consider online shopping as more risky than shopping through traditional face-to-face channels (Van Slyke, 2010; Corbitt, Thanasankita and Han, 2003; Constantinides, 2004).
Trust on transactions: According to EUROSTAT (2009) about one third of the population in the EU that does not use e-commerce has concerns about payment security.
Payment method used mostly and payment method that consumers would prefer: an important question is raised; if the most used payment method for online purchases (credit cart) is the most preferred (F-Secure Company, 2009; Nielsen Company 2008).
Usefulness and ease of use: Studies show usefulness and ease of use were positively related to the attitude towards using the e-commerce websites and ultimately the behavioural intention to buy (Smith, 2008; Ramayah and Ignatius, 2005; Singh et al., 2006).
Reasons to buy on the Internet: Studies indicate that convenience is the main reason for the motivation to engage in Internet purchasing and could lead to an enjoyable shopping experience (Nielsen Company; 2007).
Language: Language proficiency affects the access to the information and the activity on the Internet (Kralish, 2004).
This paper investigates the differences and similarities of women's behaviour toward e-commerce in two culturally different European regions; the Balkan and the Baltic. We study some of the above factors and more like age and education. For the purpose of our study we use a convenient random sample of 50 women from each country (Greece, Romania, Bulgaria, Lithuania, Estonia and Latvia), in order to answer a structured questionnaire including the aforementioned factors. The distribution of the questionnaire was realized through e-mail. We analyzed the responses, using statistical methods and exploratory data analysis with SPSS v.17 software and Chic analysis software (Markos, Menexes and Papadimitriou, 2010).

2. RESEARCH

The study was conducted in both regions from March to July of 2011. The data were collected using a structured questionnaire. The questionnaires were distributed randomly by email to women who were asked to complete them anonymously and return them. The questions were of closed type, meaning the women had to choose specific answers. Finally, 300 respondents were collected, half of them from the Baltic and half from the Balkans. 65% have a bachelor or a master degree. 66.1% belong to the age group of 18-30 and 33.3% belong to the age group of more than 31. Almost 70% are married and almost half have medium level of incomes.
Several primary conclusions can be conducted by descriptive statistics of data. More women in Balkan than in Baltic region browse 1 to 2 websites on average during single sign-on to the Internet, but more women in Baltic than in Balkan region browse about 2 to 5 websites during single sign-on to the Internet. The majority of respondents in both regions (65%) buy online very rarely, while very few use e-commerce often or always (3.8%). Also, the majority of women who use e-commerce do not spend online a lot of money. From those who buy online, the majority spends less than the 10% of their medium level of incomes. The most important reasons to buy online were the economy of time and money. The most popular online

purchases were new technologies (25%) and cosmetics (24%). There is an important group of popular purchases (25%) which includes jewelry, holiday, travel tickets, books etc. The most frequent payment method is via e-banking (31%) followed by the credit card (21%).

3. ASSOCIATIONS AMONG THE FACTORS

For the purpose of our study we made 12 hypotheses. Further analysis includes the examination of factors/variables and their associations. A strong relation between two variables is recognized with the P-value lower than 5% and a high value Pearson Chi square. The variables are significantly related when the P-values are lower than 0.05. The higher value of Pearson Chi square than minimum required for exact meaning of x^2 (degree of freedom) shows that the variables are related, have the tendency and can prove the hypothesis. The degree of freedom is calculated by the formula "(m-1) x (n-1)" where "m" is the number of possible answers in question x and "n" is the number of possible answers in question Y in the cross tabulations of selected questions.

Hypothesis H1. Women in Baltic buy more online than women in Balkan.
Table 1 presents the answers regarding region and frequency of e-commerce usage in cross tabulation of the two variables.

Table 1. Region and frequency of purchasing online

Region - How often do you usually buy from websites?		
	Baltic	**Balkan**
Never	17.10	43.15
Rarely	46.70	30.50
Sometimes	33.00	22.15
Often	3.20	3.15
Always	0	1.05

Pearson Chi-Square analysis with the index of significance 3%<5% and degree of freedom -4, shows that Pearson Chi Square value is 16.164, i.e. higher than the required 9.49. Chi-Square analysis shows that in fact Baltic women buy more than women in Balkan. A closer look at the results shows that women in Baltic buy significantly more in the groups of "rarely" and "sometimes" than women in Balkan. However, only the minority of women in both regions are active online shoppers (Figure 1).

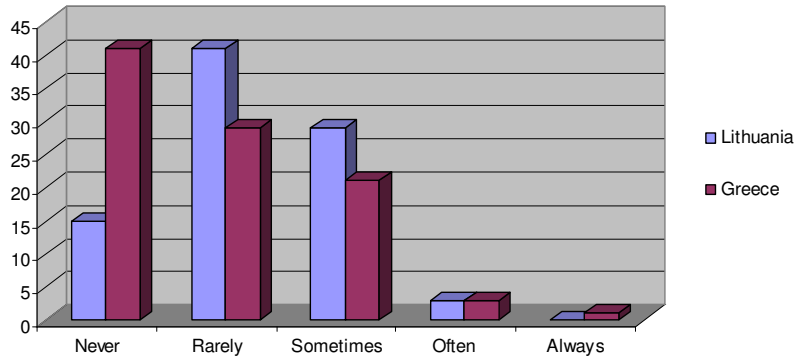

Figure 1. Region and frequency of purchasing online

Hypothesis H2. Women in Balkan consider e-commerce less useful than women in Baltic.

Table 2 presents the cross tabulated answers of region and the question "Do you think that e-commerce is useful for you?".

Table 2. Region and frequency of "usefulness"

Region - Do you think that e-commerce is useful for you?		
	Baltic	**Balkan**
Yes	92.05	60.22
No	7.95	39.78

Pearson Chi-Square analysis with the index of significance 0.1%<5% and degree of freedom - 1, shows that Pearson Chi Square value is 24.897, i.e. higher than the required 3.84. Chi-Square analysis indicates that women in Baltic consider e-commerce more useful than women in Balkan.

Hypothesis H3. Women in Balkan consider e-commerce less trustworthy than women in Baltic.

Test for this hypothesis consists of two parts, testing the relationship between region and trust in money transactions and testing the relationship between region and trust in vendors. Table 3 indicates a cross tabulation of region and trust in money transactions.

Table 3. Region and trust in transactions

Region - Money transactions are secure through Internet		
	Baltic	**Balkan**
I strongly disagree	1.14	13.78
Tend to disagree	18.22	16.96
Neither agree nor disagree	6.82	47.7
Tend to agree	71.80	18.38
I strongly agree	2.02	3.18

Pearson Chi-Square analysis with the index of significance 0.1%<5% and degree of freedom - 4, shows that Pearson Chi Square value is 66.634, i.e. higher than the required 9.49. The Chi-Square analysis reveals the tendency that women in Baltic really trust money transactions more than women in Balkan. Also, the Chi-Square analysis shows that women in Baltic trust vendors more than women in Balkan. Analysis of these variables shows that Baltic women consider e-commerce as more trustful than women in Balkan.

Hypotheses H4 and H5. Women in Baltic trust transactions' procedure more than vendors/Women in Balkan trust online vendors more than transactions' procedure.
Regarding trust in transactions and trust in vendors within the regions, there is no clear difference between trust in transactions and vendors in Baltic and in Balkan to confirm H4 and H5, but there are some tendencies that show that these two hypotheses could be partly supported. In Balkan there is no higher trust in vendors than in transactions at lower ranking (tend to agree/strongly agree). On the contrary, in Baltic there is an increasing tendency toward trust in transactions. According to what is defined H4 and H5 could be partly confirmed.

Hypothesis H6 - Higher level of trust in e-commerce will positively affect the use of e-commerce.
Tables 4 and 5 present the collected data.

Table 4. Trust in vendors and frequency of buying online

There is trust on Internet vendors - How often do you usually buy from websites?					
	Never	**Rarely**	**Sometimes**	**Often**	**Always**
I strongly disagree	6.56	1.64	0	0	0
Tend to disagree	7.65	7.10	9.29	0.55	0
Neither agree nor disagree	12.02	14.21	6.01	0.55	0
Tend to agree	4.37	15.3	11.48	2.19	0.55
I strongly agree	0	0	0.53	0	0

Pearson Chi-Square analysis with the index of significance 0.01% <5% and degree of freedom -16, showed that Pearson Chi Square value is 38.826, i.e. higher than the required of 26.30. Chi-Square analysis shows that the higher level of trust in vendor positively affects the use of e-commerce.

Table 5.Trust in transactions and frequency of buying online

Money transactions are secure through Internet - How often do you usually buy from websites?					
	Never	**Rarely**	**Sometimes**	**Often**	**Always**
I strongly disagree	6.59	1.10	0	0	0

Tend to disagree	4.40	9.89	2.75	0	0.55
Neither agree nor disagree	9.89	9.34	8.24	0.55	0
Tend to agree	8.24	17.58	15.94	2.20	0
I strongly agree	1.10	0.55	0.55	0.54	0

Pearson Chi-Square analysis (for the trust in transactions) with the index of significance 0.01%<5% and degree of freedom -16, showed that Pearson Chi Square value is 43.544, i.e. higher than the required of 26.30. Chi-Square analysis shows that the higher level of trust in transactions positively affects the usage of e-commerce. According to these two associations, it is clear that general trust in e-commerce has a positive relation with the level of e-commerce use.

Hypothesis H7. Women in Baltic use e-banking more frequently than women in Balkan.
Table 6 indicates the results.

Table 6. Frequency of e-banking usage within the regions

Region - Do you use e-banking?		
	Baltic	**Balkan**
Never	5.68	61.70
Rarely	7.95	22.34
Sometimes	20.46	8.51
Often	22.73	4.26
Always	43.18	3.19

Pearson Chi-Square analysis with the index of significance 0.01%<5% and degree of freedom -4, showed that Pearson Chi Square value is 95.885, i.e. higher than the required of 9.49. Chi-Square analysis shows that women in Baltic use e-banking more than women in Balkan.

Hypothesis H8. The higher level of e-banking use will have a positive impact on trust in transactions.
Table 7 indicates the collected data.

Table 7. The use of e-banking and trust in transactions

Do you use of e-banking? - Money transactions are secure through Internet					
	I strongly disagree	**Tend to disagree**	**Neither agree nor disagree**	**Tend to agree**	**I strongly agree**
Never	6.56	4.95	15.47	7.18	0
Rarely	1.10	3.87	6.56	3.31	0.55
Sometimes	0	1.65	4.40	8.25	0
Often	0	2.75	0.55	9.90	0
Always	0	3.85	1.10	15.47	2.53

Pearson Chi-Square analysis with the index of significance 0.01%<5% and degree of freedom -16, showed that Pearson Chi Square value is 74.044, i.e. higher than the required of 26.30. Chi-Square analysis shows that the higher level of e-banking use positively affects the trust on transactions.

Hypothesis H9. Education positively influences the respondents' opinion about e-commerce usefulness.

Table 8 indicates the collected data.

Table 8. The level of education and "usefulness"

What is your education level? - Do you think that e-commerce is useful for you?		
	Yes	**No**
Secondary	7.7	3.3
Not finished higher	17.6	3.3
Higher	30.25	11.55
Postgraduate	18.15	4.95
Not classified/post secondary	1.65	1.55

Pearson Chi-Square analysis with the index of significance 50%>5% and degree of freedom -4, showed that Pearson Chi Square value is 3.165, i.e. lower than the threshold value of 9.49. Chi-Square analysis showed that there is no significant relationship between education level and the considerations of e-commerce usefulness. Additional analysis of Pearson Chi-Square with the index of significance 10>5% and degree of freedom -16, where the Pearson Chi Square value is 23.198<26.30, shows that the level of education and intention to shop online are not related.

Hypothesis H10. Age influences the respondent's opinion about e-commerce usefulness in reverse relationship.

Table 9 indicates the collected data.

Table 9. Age and intention to buy

What is your age? – How often do you buy from websites?					
	Never	**Rarely**	**Sometimes**	**Often**	**Always**
Less than 18	0.55	0	0	0	0
18-24	14.3	16.5	8.25	0.55	0
25-30	3.3	13.75	7.7	1.65	0.55
31-40	3.85	3.85	7.7	0.55	0
41-60	8.25	3.85	3.85	0.55	0
more than 60	0.55	0.55	0	0	0

Chi-Square analysis shows there is no relation between age and the intention to buy from websites, because the index of significance was found 7%>5% (which means there is no significance) and Pearson Chi Square value with the degree of freedom - 20, showed that Pearson Chi Square value is 29.654, i.e. lower than the threshold value of 31.41.
According to the analysis there is no relation between these two variables, so the hypothesis can not be supported by this research. On the other hand, age tends to have an affect on usefulness of e-commerce. The table below presents the results (Table 10).

Table 10. E-commerce sites browsed online on average

What is your age? - Do you think that e-commerce is useful for you?		
	Yes	**No**
Less than 18	0.55	0
18-24	29.15	9.35
25-30	23.1	3.85
31-40	12.1	3.85
41-60	10.45	6.50
more than 60	0	1.10

Pearson Chi-Square analysis with the index of significance 4%<5% and degree of freedom -5, showed that Pearson Chi Square value is 11.714, i.e. not significantly higher than required (11.07). Chi-Square analysis shows that age has a trend to impact the consideration of e-commerce as useful negatively – younger respondents consider e-commerce more useful, elder respondents consider e-commerce less useful.

Hypothesis H11. The higher level of foreign language knowledge has a positive impact on e-commerce sites browsing.
Table 11 indicates the collected data.

Table 11. The cross-tabulation between level of language knowledge and the level of browsing e-commerce sites

How many foreign languages do you speak? - How many e-commerce sites (on average) do you browse every time you are online?					
	None	**About 1**	**1-2**	**2-5**	**More than 5**
none	3.3	0.55	0.55	1.10	0.55
1	4.95	6.6	12.1	3.85	1.10
2	9.9	10.10	8.25	4.95	1.65
3	5.5	8.25	5.5	1.10	1.65
More than 3	1.65	2.10	1.65	0.55	1.10

Chi-Square analysis shows that there is no relationship between knowledge of foreign languages and the intention to browse e-commerce sites more, because the index of

significance was found 23%>5% (which means there is no significance) and Pearson Chi Square value with the degree of freedom - 16, showed that Pearson Chi Square value is 19.717, i.e. lower than the required of 26.30. Also, the relationship between knowledge of languages and foreign sites browsed, Pearson Chi-Square analysis with the index of significance 0.001<5 % and degree of freedom -4, showed that Pearson Chi Square value is 42.642, i.e. significantly higher than required 9.49, in particular positively impact browsing site designed in foreign languages.

Hypothesis H12 - Higher level of browsing foreign websites has an impact to the higher level of online shopping.

Further analysis (the collected data is presented in Table 12) shows that there is a possible relationship between browsing sites designed in foreign languages and intention to buy online.

Table 12. E-commerce sites browsed and frequency online shopping

Do you browse the websites only on your native language? - How often do you buy from websites?		
	Yes	**No**
Never	10.45	20.35
Rarely	8.25	30.25
Sometimes	2.75	24.75
Often	0	3.3
Always	0	0.55

Pearson Chi-Square analysis with the index of significance 2%<5% and degree of freedom -4, showed that Pearson Chi Square value is 11.27, i.e. not significantly higher than the required of 11.07. The results show that there is a partial association between browsing sites designed in other languages and buying online.

4. CORRESPONDENCE AND HIERARCHICAL CLUSTER ANALYSIS

Correspondence Analysis is a multidimensional data analytic method, suitable for graphically exploring the association among two or more, non-metric variables without a priori hypotheses or assumptions (Markos A. et. al, 2010). Hierarchical cluster analysis (or hierarchical clustering) is a general approach to cluster analysis, in which the object is to group together objects or records that are "close" to each other. A key component of the analysis is iterative calculation of distance measures among objects, and among clusters once objects begin to be grouped into clusters. The outcome is represented graphically as a dendrogram (The Institute of Statistics Education, 2011). In the dendrogram below (Figure 2), the sub-clusters are listed along the “x” axis (with their ID numbers). The “y” axis measures the inter-cluster distance. Considering drawing a horizontal line through the dendrogram at the level 0.04, then the vertical cluster lines intersect indicate clusters whose members are close to each other. There are defined five sub-clusters which are closely related members within the group:

- 355 – This group is defined by those who are less than 24 year old, with minimum income, preferring to pay for online purchases by bank account.

- 358 – This group is defined by those who use Internet rarely, with low formal education, with children.
- 357 – This group is defined by those with high level of incomes, feeling secure about money transactions through Internet, browsing e-commerce sites frequently, sometimes having activities on selling online and often purchasing online.
- 356 – This group is defined by those who did not finish higher education yet, browsing a few e-commerce sites, use for online purchases as payment methods e-banking or Paypal.
- 359 – This group is defined by those who are 25-30 years old, higher educated, preferring to pay for their online purchases by credit card.

The above sub-clusters fulfill the multiple clusters such as 364 (Balkan) and 362 (Baltic). These two multiple clusters subscribe the Y of this research, i.e. the intention to buy online.

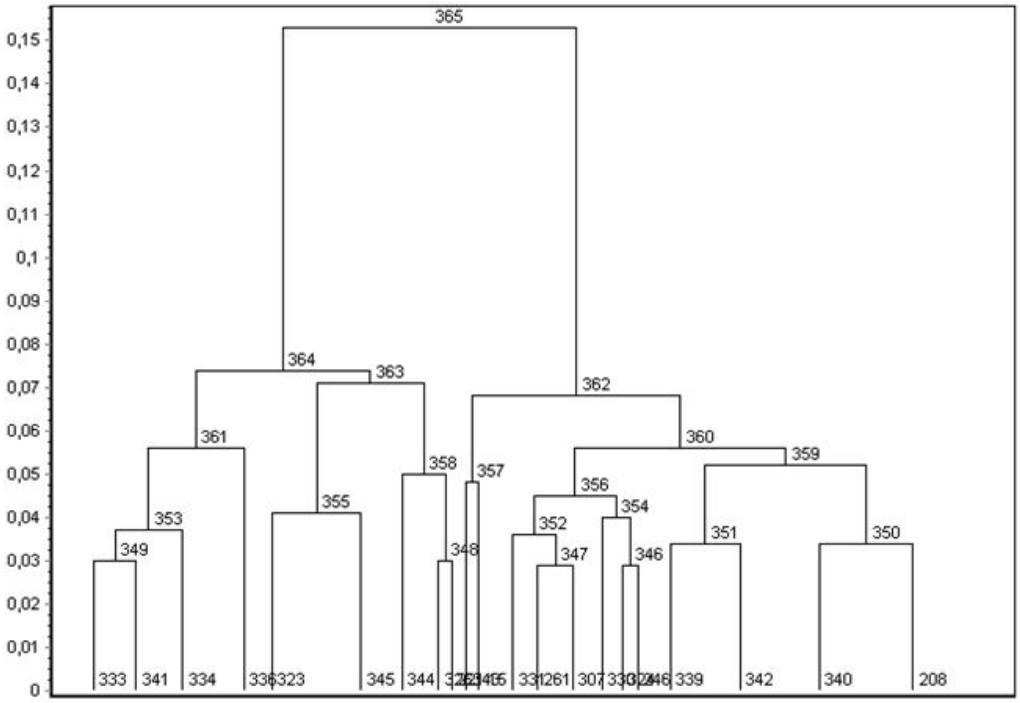

Figure 2. The dendrogram of Hierarchical clusters

In conclusion, the outcome of analysis shows that there are much more variables effecting the intention to buy online in Baltic than in Balkan. Moreover, hierarchical cluster analysis provides more abstract definition for e-shoppers in these two regions.

According to the results, women in Balkan (364) are native speakers or speaking only one foreign language, never use e-banking, consider e-commerce as not useful, and almost never buying online. Whereas, women in Baltic (362) often or always use e-banking, consider e-commerce as very useful. Moreover, the main reason to purchase online for Baltic women is the economy of time. Further research includes Factor analysis.

The graphic outcome (Figure 3) depicts the relations among variables.

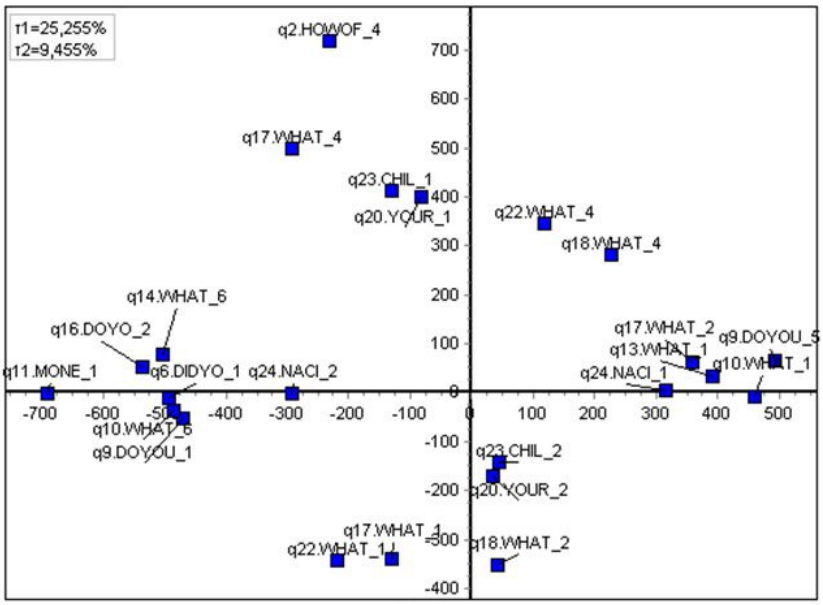

Figure 3. The asymmetric map of related factors

As it is clear from the graph above, there are four main groups of closely related questions in the research. The group in the right indicates the coherence among Baltic region and other variables, whereas, the group in the left presents the relation among Balkan region and other variables. According to the results the most correlated variables with Baltic region are age, the frequency of using e-banking, also e-banking as the most used and preferred payment method. On the other hand, most coherent variables with Balkan region are security of money transactions through Internet, use of e-banking, payment methods used, usefulness of e-commerce, use of e-commerce.

The related groups above and below indicate the coherence among variables such as incomes, use of Internet, marital status, existence of children, education level, thus as it is obvious from the graph, there is no such a strong relation among these variables. That endorses the previous results from descriptive and Chi-square analysis that age, education or incomes do not have an obvious impact on intention to buy online.

5. DISCUSSION - CONCLUSIONS

The overall research reveals that the main factors influencing consumer behaviour in e-shopping are culture, trust in transactions and vendors, usefulness and use of e-banking. On the other hand, contributing factors such as age, education, language and web experience do not have a significant impact on behaviour towards e-commerce in this study.

This research shows that in times of globalisation and cultural assimilation the culture still plays a strong role on consumer behaviour towards new commerce forms. E-commerce as a business form that has no clearly recognized boundaries and, in fact, most of the times is oriented to external markets and strongly dependent on how consumers adopt new applications of business in different regions. Understanding the factors of that influence can help improving the advantages of e-commerce.

The results show that Baltic women buy more than women in Balkans region. The study indicates that culture can influence directly and indirectly the intention to use e-commerce in this region.

The analysis reveals that there is reason to believe that better use of e-commerce is affected by better trust on e-commerce and higher level of treating e-commerce as a useful implication of business in Baltic. This can be explained because individualism also reflects the valuation of practicality, which means that culture indirectly affects the understanding regarding the usefulness of e-commerce. The Balkans as a region with a high level of uncertainty avoidance tends to adopt new technologies slower in comparison to the Baltic due to the fact that uncertainty appears through different typical ways of communication. Subsequently, a high level of uncertainty and risk have an indirect effect on the way that the trust in e-commerce is developed.

Further analysis shows in general women as e-commerce consumers constitute an e-commerce targeted consumer group because according to the results, only 30% of women in both regions have ever used e-commerce. However, the factors influencing the frequency of buying online have still not been examined and explained thoroughly. This is due to the fact that only 4% of women in the relevant regions were active e-commerce consumers. The results also reveal that the majority of women in the Balkans and the Baltic spend small amounts of money on online purchases. This outcome may be explained by the fact that the majority of respondents involved in the study have low incomes.

Consequently, it is shown that the economy of time and money still tend to be the most important reasons to buy online. Whereas, the question why women in the Balkans are more price sensitive than women in the Baltic is answered. The main reason is that the standard of living is higher in the former than the latter.

Hence, a difference was found between the most used and the most preferred payment methods for online purchases. The analysis indicated that the payment method is influenced by the use of e-banking and indirectly by the culture. The case study revealed that the use of e-banking can improve the use of payment methods which are associated with money transactions through Internet. On the other hand, those individuals who do not use e-banking are still not familiar enough with Internet technologies. They prefer to decrease their risks by choosing payment methods which are more traditional and physically identifiable. In addition, the use of e-banking shows a tendency directly to affect the trust in transactions and indirectly the use of e-commerce. Thus, this research shows that there is no clear association between web experience, age, education and language with the use of e-commerce.

However, there were other findings which could be studied in future work. For example, age does not affect the intention to buy online, although it has a negative relation with the

usefulness of e-commerce.. In other words, younger respondents consider e-commerce more useful while older respondents consider e-commerce less useful.
Therefore, it is possible that younger women in both regions are more familiar with new technologies and tend to consider e-shopping positively, but due to income constraints or other restrictions, they tend to use traditional ways of shopping.
The aim of this study was to identify the factors that affect the behaviour of consumers as regards e-commerce and to compare two culturally different regions. The main group of factors, such as culture, trust, and usefulness were defined and supported as factors having an impact on the behaviour of consumers in different regions.
However, some factors could not be defined and analyzed in depth because of their qualitative nature. The research shows that such factors as education, age and knowledge of foreign languages could be defined and related with e-commerce with more quantitative data. In this study the weight of each factor on e-commerce use was not considered; future works could include the testing of how factors such as trust, culture and usefulness e-commerce. Nevertheless, some interesting findings emerged regarding the usage of e-banking. The research shows that there is a direct impact on using e-shopping; this outcome provides the reason to include in future work more detailed analysis of how other technologies can influence the use of e-commerce. Thus, such variables as development of e-government or e-learning could be new variables in future work.
The overall research has the limitation that the lack of trust in new technologies or other reasons obstructed the process of collecting data in the Balkans, since most of the women in this region were unwilling to answer the questions.
The cultural tendencies, which were revealed in e-commerce usage, show that future works could include not only the Balkans and the Baltic as representatives of different cultures. Application of the research with the involvement of more European countries from different regions could offer valuable insights as an outcome of future work.

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