

The Importance of E-Commerce in Terms of Local Development: A Study in Turkey¹

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ABSTRACT : *Internet is a great technology as well as a vast information storage, communication tool, trading platform, education field, business and entertainment environment. Internet is also the front door of the change and development and especially of the information community that is the bearer and courier of the development existing in the scientific and technologic fields. For this reason, E-commerce, which leaves its mark on the world market and gains more importance against the classic type of trade, also occupies a quite important position in national economy. The objective of our study is; to examine this commerce platform that is established as of today in city of Gümüşhane (Turkey) and to research the potential of E-commerce with regards to national economies and the factors that effect this potential.*

KEYWORDS -*Information Services, E-Commerce Market, Shopping Preferences, Factor Analysis.*

I. INTRODUCTION

The technological change that we experience recently not only affected our daily lives, it also started to effect business life and all areas related with economical activities directly. This change brought by technology also brought along new internet-based terms such as new economy, e-commerce, information systems, e-business, e-state etc. Together with these terms, people and institutions change and economically develop themselves in order to increase their productivity and competitive power.

Today, the backbone of Internet is still growing rapidly on a regular basis and the number of Internet users is rapidly increasing with regard to the dramatic changes continue to happen within technology. The key element here is the term “adaptive” that contains the features of Internet, which expresses the open access to technical standards and changing dynamic opinions (Pastor-Satorras&Vespignani, 2004:8). By means of all these developments, the Internet’s area of usage increases worldwide day by day. The rapid increase of Internet usage carries shopping to different places.

Shopping is a social interaction and all consumers interact with others during this process (Godes et al., 2005). E-commerce that came up depending upon the development of technology is a unidirectional interaction, which may carry productivity to a maximum level (Huang & Benyoucef, 2013).

Electronic commerce or e-commerce involves online business operations for products and services both between companies and between the company and consumer. Online shopping and online purchase take part within the scope of e-commerce. Online shopping may be defined as the purchase decision of the customer for information and product from the companies that the consumer is aware within the scope of information and activities; whereas online purchase consists of purchase operations of data and products via internet within a technological infrastructure (Rosen 2002:4).

E-commerce as a radical innovation changes everything with the Internet. The new rules are being written not by the old economy perception with various rules and beliefs, which is redefined as a business world, but by the Internet as a new paradigm; Internet is an architectural whole; the radical changes and markets that are established in conjunction with Internet continuously challenges the competitors with technology (Botha, 2004: 113). As the Internet’s infrastructure grows, the volume of the e-commerce will increase (Uesangkomsate, 2015: 113). This increase shall be a great threat for the traditional stores that do not invest in e-commerce (Zhang et al., 2016).

E-commerce has become a term in the business world for a period more than a couple of years. The effect has been increased since the effect of the computers and communication technology on business world was recognized. With the combination of the electronic data change, electronic mail and Internet applications, which are a series of processes, electronic commerce enables information exchange between individuals, companies and countries (Joseph, 2008:1). Just like the other information systems, e-commerce has both concrete and abstract benefits. It is easy to calculate and evaluate the concrete benefits.

For example, an e-commerce website can execute the same operations of a normal organization with a less amount of workforce. However, it is difficult to measure and evaluate the abstract benefits. Those kinds of benefits cannot be easily identified. Some of the abstract benefits of e-commerce may be considered as; improvement of inventory control, more efficient use of human resources, development of communication, establishment of an efficient supply chain and realizing a better value chain (Bidgoli, 2002: 410).

The expectation of the customers from online shopping via Internet is not only simplicity. This situation is demonstrated on Figure 1.

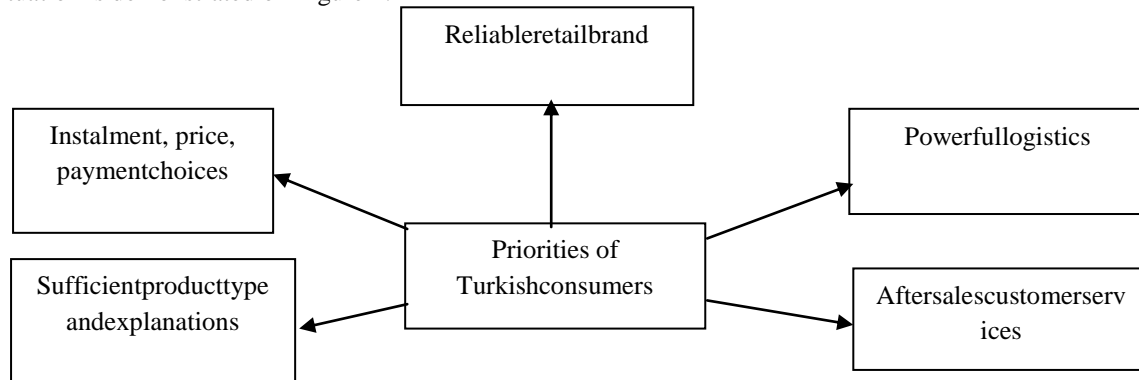


Figure 1. Expectations of Turkish Users Who Do Online Shopping

Source:<http://www.cihansalim.net/blog/2009/turkiye%E2%80%99dee-ticaret-nereden-nereye%E2%80%A6-online-ticaret-hacmi-tahmini-beklentiler-ve-basarifaktorleri>

As far as we can observe the comprehensive consumer surveys and successful and unsuccessful attempts both from inside and outside, brand and brand recognition and reliability, and logistics sufficiency are in the lead in Turkey’s e-commerce on the e-retail side. Therefore, the objective of the e-commerce is not only to sale of products and services, but also to increase the brand value (Yıldız&Kurtuldu2013: 435).

II. METHODOLOGY

2.1. The Objective and Scope of the Research

For the objective of the research, when the population structure of city of Gümüşhane, which is a city trying to develop, it is seen that the majority of the population consists of government officials and employees coming from other cities. It is observed that people living in the city experience difficulties while shopping and therefore have to use Internet for shopping. For this reason, this city has been chosen and the e-commerce potential of the city has tried to be identified. The research comprises of young and middle-aged people living in the city of Gümüşhane. It is requested from the research group to answer the questions to determine the shopping preferences and online shopping potentials. Therefore, the results shall not be generalized for whole Turkey.

2.2. Literature Review

In the literature, the studies made about e-commerce are concentrated mostly on large-scale companies and their customers. Examination of e-commerce with regard to local development is quite limited.

Graham and Marvin (2002) and Zhang & Jiao (2007) have examined the relationship between demand and e-commerce in their study. Tan and Quyang (2002) have researched the local and global factors affecting the e-commerce in China in their study.

Burt & Sparks (2003) have determined that e-commerce and network-based systems provide saving on time and increase the cost effectiveness in their study. Gibbs &Kreamer (2004) have examined the factors such as technological resources affecting e-commerce, its perceived benefits, size of the company and financial resources in their study. Gemmell& Howell (2013) have defended that the companies may offer competitive prices to the customers due to the lower cost of operations of Internet. Steel et al., (2013) determined in their study that e-commerce increases accessibility, removes the geographic obstacles and provides opportunities for shopping without time limits and therefore is preferred by the users.

2.3. Sampling Process

The main body of the research consists of individuals between ages 18-50 and living in city of Gümüşhane. The survey study has been conducted on January 2011. The population of total center of Gümüşhane in 2007 is 28,028. Convenience sampling method is used as sampling method. The margin of error

was determined to be $e=5\%$ and sampling size was determined to be $n=383$ between 95% confidence interval (Kurtuluş, 1998: 235). The survey is applied to 400 people. After the deficient and faulty surveys are eliminated, 382 surveys in total have been taken into consideration.

2.4. Method and Hypotheses

In the research, the data has been collected by survey method. There have been three groups of questions in the survey form; the first group serves to determine the demographical features, the second group serves to determine the shopping preferences and the third group serves to determine the shopping potential of the participants. The determining statistical methods, factor analysis and multiple regression analysis has been used in data analysis.

The hypotheses of the research in accordance with the objective of the research are listed below:

- H1.** The reasons to use e-commerce have effects on the amount of shopping done via e-commerce.
- H2.** The e-commerce preferences have effects on the amount of shopping done via e-commerce.
- H3.** The structure of online companies has effects on the amount of shopping done via e-commerce.
- H4.** The reasons for not using e-commerce have effects on the amount of shopping done via e-commerce.
- H5.** The relationship between e-commerce and Internet has effects on the amount of shopping done via e-commerce.

III. FINDINGS

3.1. Demographic Findings

The demographic features of the participants are presented on Table 1.

Table 1. Demographic Characteristics of The Participants

Gender	Frequency	Percent	Age	Frequency	Percent
Female	90	23,6	18-21	15	3,9
Male	288	62,8	22-25	26	6,8
			26-40	310	81,2
			41-50	31	8,1
			50-	0	0
Education	Frequency	Percent	Income (TL)	Frequency	Percent
Literate	0	0	0-500	13	3,4
Primary Education	6	1,6	501-1000	41	10,7
High school	58	15,2	1001-2000	107	28,0
University	192	50,3	2001-3000	193	50,5
Graduate	126	33,0	3000 Üstü	28	7,3
Profession	Frequency	Percent	Maritalstatus	Frequency	Percent
Worker	37	9,7	Married	142	37,2
Officer	297	77,7	Single	240	62,8
Housewife	21	5,5			
Student	17	4,5			
Self-employment	10	2,6			

As it can be seen on Table 1, 23.6% of the participants are female and 62.8% of the participants are male. In addition to this, 81.2% of the participants of the survey consist of individuals between ages 26 and 40. 15.2% of the participants are high school graduates, 50.3% of the participants are university graduates and 33.0% of the participants are postgraduates. When their income status are considered, 10.7% of the participants have monthly income between 501-1000TL, 28.0% of the participants have monthly income between 1001-2000TL and 50.5% of the participants have monthly income between 2001-3000TL. The 77.7% of the participants are governmental officials.

3.2. Shopping Profile of the Participants

The shopping profile of the participants is demonstrated on Table 2.

Table 2. Shopping Profile of TheParticipants

Expenditure (Monthly)	Frequency	Percent	Theamount of e-commerce (Monthly)	Frequency	Percent
0	7	1,8	0	66	17,3
101-250	24	6,3	10-100	106	27,7
251-500	95	24,9	101-500	205	53,7
501-2000	207	54,2	501-2000	4	1,0
2000 -	49	12,8	2000 Üstü	1	0,3
Do youknow e-commerce?	Frequency	Percent	Do youlikeshopping?	Frequency	Percent
Yes	373	97,6	Yes	348	91,1
No	9	2,4	No	34	8,9
Didyou do shoppingvia e-commerce?	Frequency	Percent	E-commerce issafe	Frequency	Percent
Yes	311	81,4	Yes	307	80,4
No	71	18,6	No	75	19,6

In accordance with the Table 2, the 54.2% of the participants spend between 501-2000TL monthly in total, 24.9% percent of the participants spend between 251-500 monthly in total and 12.8% of the participants more than 2000TL monthly in total. In addition with this, 53.7% of the participants spend between 101-500TL monthly via e-commerce, 27.7% of the participants spend 10-100TL monthly via e-commerce, and moreover 17.3% of the participants do not spend any money on e-commerce. 97.6% of the participants know e-commerce whereas 81.4% of the participants do shopping via e-commerce. 80.4% of the participants of the survey found e-commerce secure.

3.3. Factor Analysis

Factor analysis is made up of data reduction technique. Factor analysis is the process of carrying the data associated with each other and data sets that represent data to reduced variables or factors that are established. In explanatory factor analysis, the researcher tries to discover the possible relationship between the variables since the researcher does not have any opinion or prediction intended for the relationship between the variables related with the subject being researched (Altunışık, et. al., 2005).

Explanatory factor analysis was used in our study in order to determine the possible relationships between variables and to obtain appropriate variables for the other analyses by using the relationships determined between the variables.

3.4. The Results of the Factor Analysis Applied to the Variables

At first, reliability test was applied to the data obtained. The Cronbach Alpha value of the reliability test applied to all the variables used in the factor analysis was found 0.846. Since the value is quite over 0.70, the scale was found reliable and factor analysis was applied to the variables. Within the factor analysis, reliability test was also applied to the variables of the separated factors and the values of the variables are presented on the table.

We consulted Bartlett test, which is a global test and shows whether the data are related with each other or not, and consulted Kaiser Mayer Olkin (KMO) measures, which tests the suitability of the sample size to the factor analysis, in order to determine the suitability of the data to the factor analysis. It is observed that the statistics, which are calculated as Bartlett Value: 8922.346; P: 0.000 and KMO: 0.751, are suitable for the factor analysis study. As a result of the factor analysis, the variables with factor load equals to and greater than 0.50 are taken into consideration and the factor is found 5. These factors explain the 77.309 % of the total variance.

Table 3. Results of Factor Analysis

Variables	Factor Loads	Variance Percentage	Eigenvalue	Cronbach Alpha
F1- The Reasons for E-Commerce Usage		18,841	4,145	0,889
I shop online because I cannot find well-known brands in the city I live in.	0,709			
I have bought many products online up to now.	0,700			
I shop online because the city I live in is a small city.	0,697			
I shop online because I do not have many choices in the city I live in.	0,696			
I like online shopping more than actual shopping.	0,692			
F2- E-Commerce Shopping Choices		18,232	4,011	0,878
I buy the product I like online	0,813			
I get to know e-commerce through my friends.	0,796			
I usually buy cosmetic products online.	0,768			
I usually buy textile products online.	0,661			
F3- Structure of Online Companies with E-Commerce		16,188	3,561	0,854
Product range of the stores that I do online shopping is important for me.	0,865			
Payment type while I do online shopping is important for me.	0,856			
The design of the stores while I do online shopping is important for me.	0,784			
I like online shopping.	0,503			
F4- The Reasons Why E-Commerce is not Being Used		12,639	2,781	0,751
I usually experience problems while I do online shopping.	0,824			
I found online shopping nonsensical.	0,782			
I have difficulty in online shopping.	0,713			
I don't find giving my credit card information to web site secure.	0,625			
F5- The Relationship Between E-Commerce and Internet		11,408	2,510	0,804
I usually buy electronic products online.	0,842			
I usually buy textile products online.	0,781			
I continually use internet.	0,544			
I use web e-mail services.	0,524			

Factor loads of the factor 5, variance percentages, eigenvalues, factor names and the variables of the factors are presented on Table 3.

3.5. Findings of Multiple Regression Analysis

“Monthly Amount of Shopping Done via E-Commerce” variable was used as the dependent variable. The independent variables consist of 5 factors, which are found as a result of the factor analysis applied to the variables. The results of the multiple regression analysis are presented on Table 4.

Table 4. The Multiple Regression Analysis Results -1

Model	Sum of Squares	df	Mean of Squares	F	Sig.
Regression	133,257	5		96,501	0,000(a)
Waste	103,842	376			
Total	237,099	381			
Anova	R	R ²	Adjusted R ²	Std. Forecast Error	Durbin-Watson
1	0,750(a)	0,562	0,556	0,52552	1,852

Independent Variables: The Reasons for E-Commerce Usage, E-Commerce Shopping Choices, The Structure of Online Companies with E-Commerce, The Reasons Why E-Commerce is not Being Used, The Relationship Between E-Commerce and Internet.

Dependent Variable: Monthly Shopping Amount Done by E-Commerce

Meaningfulness of regression model is generally tested and F value is calculated to be 96.501 and P: 0.000 and these values are found meaningful. Table 4 shows that the regression model is meaningful and also which variables are statistically meaningful and the coefficients that these variables indicate. Certainty coefficient (R square) value was found to be 0.562. This means that; the reasons for e-commerce usage, e-commerce shopping choices, the structure of online companies with e-commerce, the reasons why e-commerce is not being used and the relationship between e-commerce and Internet variables are 56 % effective on the amount of shopping done by e-commerce. When this effect is tested by ANOVA, it is observed that this effect is meaningful on the degree of 5 % (P=0.000<0,05).

Table 5. The Multiple Regression Analysis Results -2

Beta Values	Non-Standardized Regression Coefficients		Standardized Regression Coefficients	T	Sig.
	B	Std. Error	Beta	B	Std. Error
Independent Variables	2,393	0,027		88,986	0,000
Reasons for using e-commerce	0,240	0,027	0,305	8,929	0,000
E-commerce shopping preferences	0,374	0,027	0,474	13,898	0,000
The structure of the virtual firm	0,125	0,027	0,158	4,641	0,000
The reasons for not using e-commerce	0,336	0,027	0,425	12,462	0,000
Relation of e-commerce and internet	0,154	0,027	0,195	5,724	0,000

Dependent Variable: Monthly Shopping Amount Done by E-Commerce

If we describe this relationship mathematically by using the constant and B values that are presented on Table 5;

It can be written as; *Monthly Shopping Amount Done by E-Commerce = 2.393 + 0.240 the reasons for e-commerce usage + 0.374 E-commerce shopping choices + 0.125 the structure of online companies with E-commerce + 0.336 the reasons why E-commerce is not being used + 0.154 the relationship between E-commerce and Internet.*

This equation shows that 1 unit increase in the reasons for e-commerce usage causes a 0.240 unit increase in the monthly shopping amount done by e-commerce. In addition with this; 1 unit increase in variables e-commerce shopping choices, the structures of online companies with e-commerce, the reasons why e-commerce is not being used and the relationship between e-commerce and Internet shall cause respectively 0.374, 0.125, 0.336 and 0.154 unit increase in the monthly shopping amount done by e-commerce.

In accordance with these results; the hypotheses stated below are accepted: H1: "The reasons to use e-commerce have effects on the amount of shopping done via e-commerce." H2: "The e-commerce preferences have effects on the amount of shopping done via e-commerce." H3: "The structure of online companies has effects on the amount of shopping done via e-commerce." H4: "The reasons for not using e-commerce have effects on the amount of shopping done via e-commerce." H5: "The relationship between e-commerce and Internet has effects on the amount of shopping done via e-commerce."

IV. CONCLUSIONS

When E-commerce is discussed in relation with Turkish consumers, e-commerce is at first started to be known with a website named gittigidiyor in year 2001. Since Turkish consumers were trying to adapt to Internet on that period of time, these type of websites were operating in foreign languages, high costs of transportation and the products were delivered to the customer in a long time, there was not an intense demand for e-commerce and e-commerce could not become a habit. The activities of the company at first seem absurd to the Turkish consumers, however, the company started to gain the trust of people with the free deposit service in time. Turkish consumers usually refrain from shopping via e-commerce because of their concerns about the security and their lack of knowledge about the purchase operations process of e-commerce. In Turkey it is observed that wholly accepted concerns related with e-commerce have disappeared in time and people started to use these website widely. Consumer to consumer e-commerce, which is a type of marketing, has reached a significant size both in a global sense and in Turkey with regards to e-commerce.

It is observed in the study done in city of Gümüşhane, which is a developing city, that the sales volume of e-commerce is considerably high. In accordance with the statistical results of our study; 26.4 % of the participants gave "I agree", 12.1 % of the participants gave "Neutral", 61.5 % of the participants gave "I do not agree" as answers to the question "Do you find sharing your credit card information on Internet?" and moreover, 80.4 % of the participants gave yes and 19.6 % of the participants gave no as answers for the question "Do you find shopping via e-commerce secure?" In accordance with these results, it is understood that the people doing online shopping via e-commerce in city of Gümüşhane do not have trust issues. The percentage of people participating in the study conducted in city of Gümüşhane who use e-commerce thinking that the city is small and their shopping chances are limited is 75.9 %. Together with this, the percentage of people in Gümüşhane who use e-commerce since they cannot find famous brands is 70.1 %. As it can be understood from these results, the people in developing cities tend towards to e-commerce both because they cannot find what they are looking for and they have little options for shopping. 19.1 % of the participants buy electronic products, 5.2 % percent of the participants buy cleaning products, 7.1 % of the participants buy food products, 48.5 % buy cosmetics products and 61 % of the participants buy any product that they like online. Besides that the negative answers given to some of the questions are quite interesting; 78.8 % of the participants gave I do not agree, 13.1 % of the participants gave neutral, 8.1 % of the participants gave I agree as an answer to the statement "I find shopping online absurd"; whereas 70.9 % of the participants gave I do not agree, 22.5 % of the participants gave neutral, 6.6% of the participants I agree as an answer for the statement "I usually experience problems while online shopping". As it can be understood from these results the consumers in Gümüşhane do not perceive e-commerce as a problematic type of shopping. When the relationship between the education levels of the consumers and e-commerce in the study conducted, it is observed that 2.9 % of the graduates of elementary school spend between 101-250 TL for shopping via e-commerce, 12.3 % of the high school graduates spend between 101-250 TL for shopping via e-commerce, whereas 71.2 % of the university graduates stated that they spend between 251-500 TL for shopping via e-commerce. As it can be understood from these results as the education level increase, the shopping volume of e-commerce increases too.

The most important question of the study, which is "What is your monthly shopping amount done via e-commerce?"; 53.7 % of the participants answer as between 251-500 TL, 27.7 % of them answer as between 101-250 TL and 17.3 % of them answer as 0 TL. In our study, we tried to determine the e-commerce potential and the factors affecting e-commerce in the city. In accordance with this purpose, the variables were subjected to factor analysis, and 5 different factors were obtained as a result of the analysis. Multiple regression analysis was applied in order to determine how these factors affect the e-commerce potential. In the analysis, while these factors were used as independent variables, "What is your monthly shopping amount done via e-commerce?" variable was used as the dependent variable and these results were obtained; the reasons of e-commerce usage factor affects the amount of e-commerce by 24 %. Besides this, e-commerce shopping choices affect the amount of e-commerce approximately by 38 %, the structure of the online companies with e-commerce affect by 13 %, the reasons why e-commerce is not being used affect by 34 % and the relationship between e-commerce and Internet affect by 16 %.

As it can be understood from the statistical results; e-commerce is reaching a greater sales potential day by day. Individuals started to find e-commerce quite attractive due to the shopping disadvantages experienced in Gümüşhane and similar cities. Therefore, it is estimated that the e-commerce potential will be much higher in these kind of cities in the future.

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