AN ANALYSIS OF E-COMMERCE MARKET IN UKRAINE: WHAT DRIVES THE COSUMER TO BUY ONLINE

by

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LIST OF ABBREVIATIONS

BRDO Better Regulation Delivery Office

CAGR Compound annual growth rate

EU European Union

GDP Gross Domestic Product

OECD Organization for Economic Co-operation and Development

SSSU State Statistical Service of Ukraine

UAH Ukrainian Hryvnia

USD United States dollar

WTO World Trade Organization

YoY Year-over-year

CHAPTER 1. INTRODUCTION

E-commerce or Electronic commerce could be related as buying and selling goods and services over an electronic network, primarily the Internet. The active development of the Internet contributes to the formation of a network that significantly affects the sphere of trade; therefore, the Internet has become not only a place for exchanging information but also a platform for buying and selling both material goods and services. The world of e-commerce and traditional commerce, as everyone knows it, is now merging and everything becomes omnichannel.

The Internet as a distribution channel broadens the market area, provides the consumer with more information and the possibility to compare different product features and price. Taking into consideration the abrupt development of web and Internet technologies, e-commerce is capturing each corner of the world and is evolving as s separate sector of the economy. The e-commerce environment stimulates the modernization of business processes (production, distribution, marketing, etc.) and both trade and economic relations.

E-commerce, as the contemporary way of product and services proposition, has already become an inherent part of many people's lives. Ukraine is not an exception is this profound transformation, with its trade relations actively moving into the world of online. Over the last six years, the e-commerce market in Ukraine demonstrated a compound annual growth rate of 24.7%, which even exceeded the global market growth of 21.5%. As for 2019, the total size of the market in Ukraine reached 76 UAH bn, or 7% of total retail sales.

In Ukraine, the emergence and development of e-commerce took place a bit later, than over the developed counties, European in particular. Despite this fact, in 2018,

Ukraine managed to demonstrate the second-fastest e-commerce sector growth among European countries of 31%, according to European Ecommerce Report. This tremendous market growth exceeded by Romania only, while Ukraine was well ahead of the global average of 25%.

The mentioned trends represent an expansion opportunity through a new channel for the already excising offline retail companies, a perspective of early market entry for the new players, and also the favorable business-environment for those who already capture a considerable market share over the Ukrainian e-commerce market. Together with the opportunities, a more intense competitive environment appears.

A profound understanding of the key drivers of a consumer's decision to prefer online shopping becomes more and more critical for the players in the e-commerce environment. The success of any company depends to the high extent on its ability to maintain a strong customer relationship. The success of retailers in the digital age, in particular, requires developing deep awareness and consciousness of a buyer's portrait. Therefore, comprehensive reasoning behind their consumers' buying choices and preferences becomes more and more critical for the process of developing and improving companies' marketing strategies.

The process of convincing the consumer to buy online is a complicated task. Several factors affect this decision, among which are his phycological, social, and demographic factors. The rapid year-over-year growth of e-commerce retail sales was fueled to a high extent by the appearance of a new generation of consumers who have special requirements, preferences, and values. For online sellers, this trend generates both challenges and opportunities.

Looking through the tendencies listed above, the author decided to make this research with the following goals:

- To conduct the deep analysis of the current market position and verify what influences its accelerated growth;

- To analyze the most prominent purchasing patterns attributable to the Ukrainian online buyer;

- To identify the determinants of a consumer's choice to make online purchases.

To reach the last two goals, a sociological survey was conducted by the author in order to create a sample for further regression analysis. As a result, a sample of 357 observations was obtained to represent the scope of the research.

It should be pointed out that the results of this study could not be generalized to all the Ukrainian online shopping users due to the limitations related to the sample size and insufficient diversity of the observations. Further research may apply more sophisticated statistical techniques to improve the conclusiveness of the outcomes of this study.

CHAPTER 2. INDUSTRY OVERVIEW AND RELATED STUDIES

2.1 The concept of e-commerce

From its very beginning the phenomenon of electronic commerce has become an area of interest and attention from scientists and researchers. There are several definitions of what e-commerce is. Thus, next I provide a brief overview of the most used definitions of this term.

According to the definition given by the WTO, e-commerce is the production, distribution, marketing, sales or delivery of goods and services by electronic means.

The OECD defines electronic commerce as commercial transactions, involving both organizations and individuals, that are based upon the processing and transmission of digitized data, including text, sound and visuals images and that are carried out over open networks (like, the internet) or closed networks (like, AOL or Mintel) that have gateway onto an open network.

J. Stephenson defines e-commerce as "the sum total of those processes, which are engaged in the removal of hindrances of persons, place and time in the exchange of commodities". (Stephenson, 2001) A more comprehensive definition is the following: "The transformation of an organization's processes to deliver additional customer value through the application of technologies, philosophies and computing paradigm of the new economy." (Melao, 2008)

Some scientific papers consider that the process of buying and selling over the Internet should be viewed as the former being a subset of the latter (Turban et al., 2006). At the same time, another part of them insist on the idea that despite being related these two concepts are distinct (Laudon and Traver, 2008). And, the rest prefer to use both these terms interchangeably and look at them as the sane thing.

Summarizing all the considered definitions, electronic commerce could be defined as:

1. In the narrow sense, e-commerce is financial transactions, exercised through the application of electronic means, mainly the Internet and private communication networks, during which the additional consumer value is delivered through the purchase or sale of goods and services.

2. In the broad sense, e-commerce means any form of business relationship, whereas those engaged interact through the use of Internet.

2.2 Literature review

It is typically argued in the literature that the buying behavior of those consumers who make purchases through online channels have a wide range of disparities with the one that is exhibited in the traditional environment.

The process of investigation of the determinants of consumer behavior, in particular of their choice to make online purchases instead of offline, should be initiated with the identification of core influencing factors. Attempting to define the characteristics which are attributable to the online consumer is a complicated task, taking into consideration the rapid growth of an e-commerce market worldwide as a consequence of both technology innovation development and the appearance of different consumer segments. The theories of consumer behavior could serve as an exhaustive source of such factors.

The consumer decision-making process has been of interest to researchers for a long time. Over 300 years ago a group of economists, in particular Bernoulli, Neumann, and Morgenstern, began working on the investigation of the basis of consumer decision making. They were attempting to investigate the topic from an economic perspective, with the 'Utility theory' being the most prevalent model at that time. The latest assumes that consumer decisions are made concerning the expected outcomes of their choices, and the

consumers are viewed as rational decision-makers. This perception of consumer behavior has evolved through several stages over the next centuries following the adaptation of innovative research methodologies.

Since then, several different approaches were adopted in the study of consumer decision making process. According to Bray (2008), five most distinct approaches, which state the need to examine quite different variables, are the following: Economic Man; Psychodynamic; Behaviourist; Cognitive; Humanistic. All these theories are briefly discussed above.

1. **Economic man.** At the end of the 19th century, Persky was the first to mention the term 'economic man' or 'Homo economicus', much later than the concept of a man as entirely rational and self-interested. From the economic perspective, rational behavior is related to the awareness of all possible consumption alternatives, the capability to rank all these alternatives from the most important to the least one, and readiness to choose the optimal one. After all, the modern consumer is rarely able to choose the perfect possible option due to the lack of appropriate information, motivation, or time constraints. At the same time, the price can often have less considerable influence on the final decision than such factors as social relationships and values.

2. **Psychodynamic approach.** The concept is based on the perception that behavior is driven by an individual's instincts, which he or she could not control appropriately. The work of a famous empirical scientist Sigmund Freud is primarily associated with this view.

3. **Behaviourist.** According to this theory, behavior is determined by the factors which are external to the consumer. Therefore, this view is contradictive to Psychodynamic approach, that was prevalent in 1920-ies.

4. **Cognitive.** This theory is considered by the majority as best one in terms of a consumer decision making explanation. An influential role of the environment and social experience was taken into consideration, together with the environmental and social factors as informational inputs driving the decision-making process (Stewart 1994).

5. **Humanistic.** This new approach is seeking to explore concepts which are attributed to an individual consumer rather than to describe the general process (Stewart 1994). Firstly, it is stated that all the former theories neglected the role of emotion. Secondly, the gap between the consumer intention and the final purchase were intended to be understood through the concept of volition. Thirdly, the altruistic motives impact on the consumer behavior was explored.

In the excising literature, there is little insight into the difference in the attributes of online and offline shoppers. With the rapid spread of technology and innovation, and further appearance of the possibility not to go to the store but just place an online order, the factors influencing such kind of purchases obviously have different effect compared with the usual consumer decision making process.

Nevertheless, some empirical studies provide takeaways regarding the attitudes that inhibit or encourage online purchases. A study of Siu and Cheng (2001) emphasizes that such factors as economic gains, availability, compatibility, security risk, monthly income, opinion leadership on the technological product, attitudes towards technological development as well as venturesomeness are considered as critical when identifying the online shoppers. Kwan, Fox, and Zinkhan (2002) limited their study to 4 core domains that have an impact on a consumer's decision to buy online: attitude, experience, demographics, and personality traits. Teo and Yu (2005) indicated that a perceived transaction cost could have a considerable impact on an online buying decision. In particular, when the transaction cost is associated mainly with the uncertainty and dependability of online stores, and the buyer does not have much online experience, the probability of buying online

decreases. The research of Cho (2004) indicated that such a factor as risk perception positively affects the likelihood of adopting e-commerce transactions.

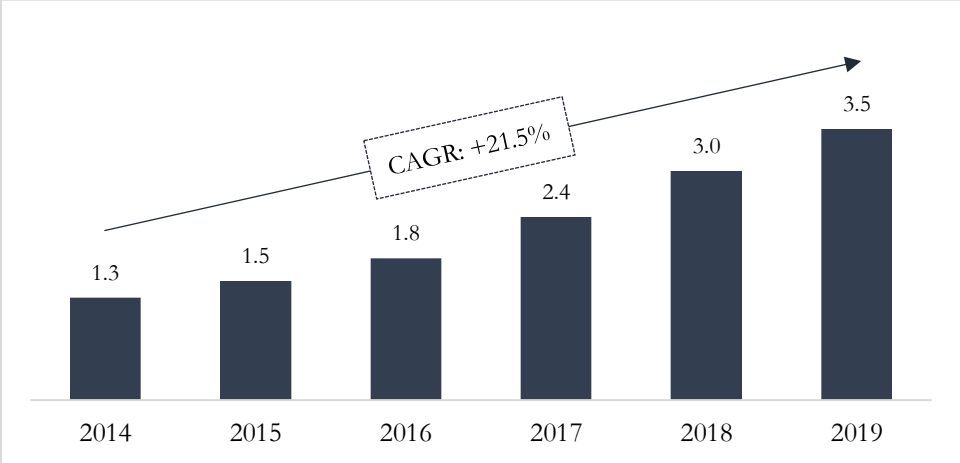
Moreover, a study of Chang, Cheung, and Lai (2005) serves as an overview of 45 empirical studies of the use of online shopping and its key determinants. Factors from the reviewed papers were categorized into three dimensions: consumer perception, characteristics of website/product, and consumer characteristics. Consumer perception dimension was identified by the following factors: experience, perceived risk, trust, service quality. Characteristics of website and product were described by web features, risk reduction measures, a delivery mechanism. And finally, demographics, attitude, knowledge, and psychological variables determined the consumer characteristics dimension. Despite the fact that the observed factors were mixed to some extent across studies, some trends were bright and obvious. Variables with a negative effect on online shopping attitudes contained price, risk perception, and cost, while trust and relative advantage demonstrated a positive effect.

Several articles conducted research with an aim to define the characteristics of online consumers. Among them, in particular, Allred, Smith, and Swinyard (2006) found out that online consumer has the following attributes: young, wealthy, well-educated, with a high level of computer literacy and high level of expenditures. At the same time, Donuthou and Garicia (1999) listed the characteristics of an online buyer in the following way: mature, rich, convenience seeker, with high risk tolerance, innovative, impulsive, less brand, and price-conscious, with a positive perception of advertising and digital marketing. It is quite clear, that these two descriptions differ considerably. Due to the rapid development of e-commerce, it is a complicated task to identify the online consumer portrait. This fast-moving industry leads to the formation of different consumer types and taking into consideration that the product type also has a significant influence on consumer behavior, it is difficult to determine the characteristics which could be generally employed to any online consumer.

2.3 Industry overview

The e-commerce retail segment in the world is growing rapidly. Its volume in 2019 amounted to USD 3.5 trillion, according to Statista, or 14% of total retail sales. Experts predict that in 2023 the share of e-commerce will reach 21.8%, which will amount to more than USD 6.5 trillion. Overall, over the last six years the global e-commerce market has been demonstrating a steep growth with a CAGR of 21.5%. (Figure 1)

Figure 1. Global retail e-commerce sales (2014-2019), in trillions of USD



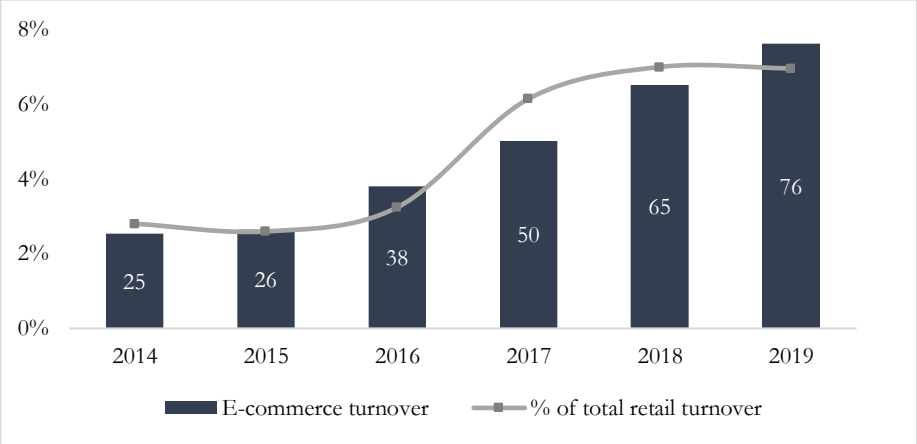
Source: Statista (2020)

On the basis of the parties of economic relations and on their interaction between them, e-commerce currently captures all four of the major market segments: business to business (B2B), business to consumer (B2C), consumer to consumer (C2C) and consumer to business (C2B).

Taking into consideration the engagement of Ukraine in the globalization processes, e-commerce has now become perhaps one of the most promising niches of

business in Ukraine. According to the estimates of one of the largest Ukrainian product IT companies – EVO, the turnover of physical goods and services purchased in Ukraine online as of 2019 was 76 UAH bn or 6.9% of total retail sales. Nevertheless, if comparing these volumes with the global ones, it becomes clear, that the Ukrainian e-commerce market is still on its infancy stage. Moreover, considering the fact that the market is not mature, it is, therefore, extremely fast-growing. In particular, over the last six years, it has demonstrated outstanding growth backed by a CAGR of 24.7%. At the same time, the well-established retail trade segment in Ukraine was maintaining a growth rate of 3.9%. Furthermore, this argument could also be supported by the data from SSSU regarding the constantly decreasing number of offline stores (retail trade enterprises), as starting from 1990 their availability was decreasing with a CAGR of 3.8%.

Figure 2. Ukrainian retail e-commerce sales (2014-2019), in billions of UAH



Sources: Ukrainian Retail Association, EVO Business Report, Ekos Global

Despite demonstrating a tremendous YoY growth, which even exceeds the total growth of the global market, the Ukrainian online environment still has a lot of limitations, contraction of which could open even stronger expansion potential. The level of internet penetration in the country reached 67% in 2019, while the average indicator for Eastern Europe by that time was 71%. Meanwhile, the country with the highest internet penetration

level – Iceland – has almost reached the complete population coverage (99% in 2018). At the same time, the number of Internet users in Ukraine is growing rapidly YoY, which is demonstrated by the annual growth indicator of 5.7% between 2019 and 2020. Going deeper, the share of consumers using the internet who shopped online is comparably small. Only 21% of the Ukrainian population shop online, while among the Internet users 34% (52% in Europe) make online purchases. To emphasize the contrast, 88% of Internet users in Switzerland do shopping online.

Still, the e-commerce industry in Ukraine generates 1.9% of the Ukrainian GDP, which is a slightly larger fraction than average among the European countries (1.5%). The explanation for this might lay in the fact that Ukraine market segmentation if not that developed and multilateral. The average spending on internet purchases in Europe is EUR 276, while in Ukraine people spend on average UAH 200-1000.

Table 1. Key e-commerce environment indicators of Ukraine, 2019

Indicator	Value
Internet penetration	67%
Annual growth in the number of Internet users	+5.7%
Internet shoppers as a share of Internet users	34%
Internet shoppers as a share of population	21%
E-commerce as % of GDP	1.9%
Secure Internet servers (normalized)	76%
UPU postal reliability score, out of 100	92

Sources: UNCTAD B2C E-Commerce Index Report, European E-Commerce Report 2019, Digital 2020 Report

Another prominent factors which represent the current Ukrainian environment of e-commerce market are world famous indices. They could serve as a benchmark which indicate the placement of Ukraine compared to other countries in the digital eco-system.

(Table 2) It is still comparably hard to launch and develop a business in Ukraine, logistics issues create limitations for online retailers in terms of purchases delivery, and e-government as a key factor in order to advance the implementation of the Sustainable Development Goals is also lagging behind. Yet, Ukraine has the openness of the state budget and access to national registries, according to its placement by Global Open Data Index. Despite comparably low level of internet penetration in a country, internet's availability, affordability, relevance and the readiness of people to use it are well-developed. Moreover, the innovation performance of Ukraine is above average.

Table 2. Ukraine placement by key e-commerce related indices, 2019

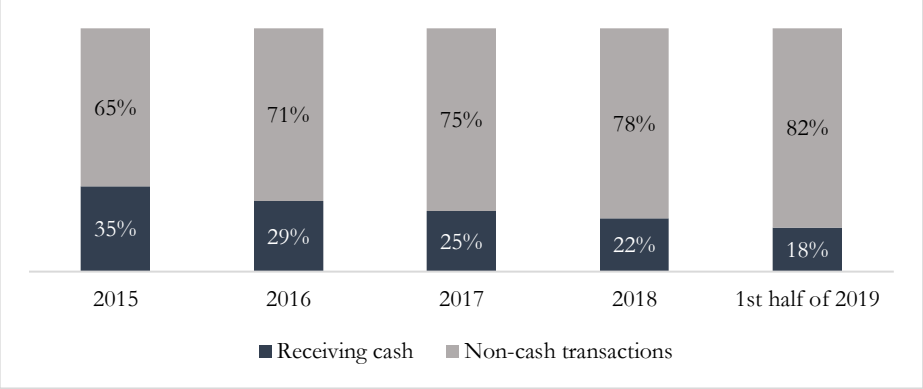
Index	**Place**
Ease of Doing business	71th
Logistics performance index	66th
E-government development index	82th
Global Open Data Index	31th
Inclusive Internet	34th
The Global Innovation Index	43th

Source: European E-Commerce Report 2019, Indices Reports

According to the Ukrainian processing center, one active bank card of an online buyer country has an average of 5.6 purchases per month.

National Bank of Ukraine states, that the share of non-cash payments using bank cards in Ukraine in volume increased to 49% in the 1st half of 2019. At the same time, the share of non-cash transactions in number reached 82%. (Figure 3) Thus, people in Ukraine are rapidly implementing cashless payments into their everyday life, however, still the volume of non-cash transactions remains smaller comparing with the cash payments. These tendencies are undoubtedly among the triggers of the fact-growing e-commerce market.

Figure 3. Growth in the share of non-cash transactions in quantity, %



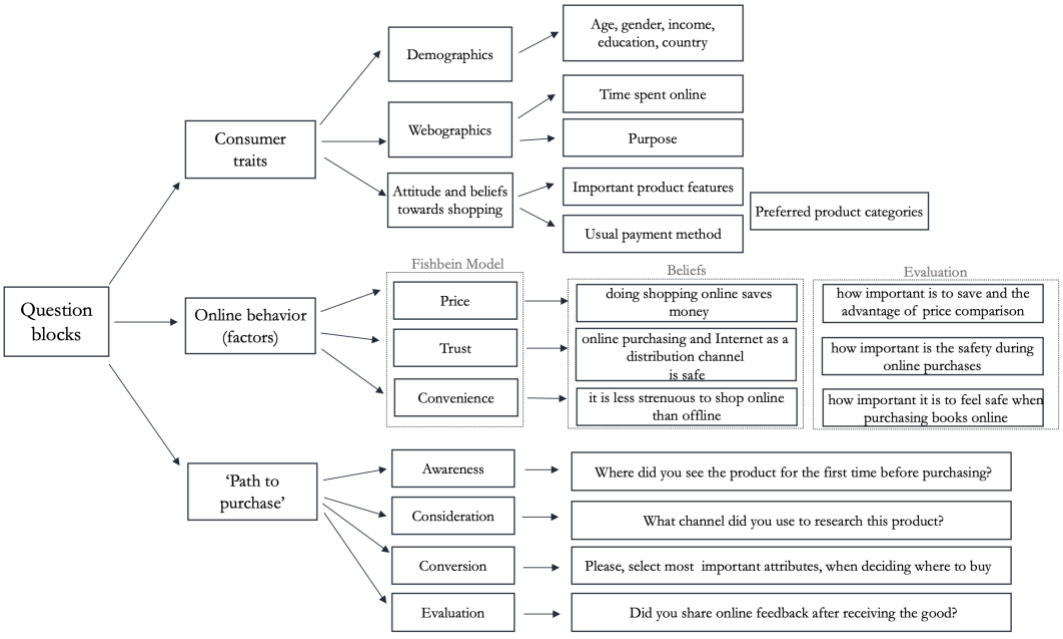
Source: National Bank of Ukraine

CHAPTER 3. METHODOLOGY

3.1 Choice of methodology

With an aim to determine the core drivers of a consumer's predisposition to make online purchases, the author conducted an initial review of related literature on consumer behavior and the e-commerce market. Particular attention was paid to the selected methodology and obtained the results of the studies. Following the prevalent practice and the absence of any data related to this question in Ukraine, the author came to the conclusion that the most appropriate approach would be a sociological questionnaire.

Figure 4. Questionnaire subdivisions



It should be mentioned, the results of this research cannot be generalized to all the consumers buying online, because of the size of a sample and the limitations related to the

overall sampling process. The latest is denominated by the combination of judgmental and snowball sampling techniques which were used by the author to collect the responses. Nevertheless, the author expects that future studies of this topic will apply more comprehensive statistical techniques to accomplish this study and improve its conclusiveness.

3.2 Online consumer characteristics determination

Demographics

Based on the stage of a live characteristic of the respondents, the author decided to divide the sample into four broad age groups: Baby Boomers (born 1946-1965); Generation X (born 1966-1979); Millennials (born 1980-1994); Gen Z (born after 1995).

The income level of the respondents was assessed by asking them about their personal monthly income based on the evidence that the minimum wage in Ukraine is UAH 4723 (~USD 175) per month starting from 01/01/2020.

In addition, the respondents were asked to define their gender, country where they currently live, and the highest degree or level of school they have completed.

Webographics

The question about the average daily time spent online was used to investigate how strongly the consumer is addicted to the Internet, and to which extent the lifestyle of the consumer is interconnected with the world wide web. The additional question in this section was aimed to define why the respondent mainly uses the Internet with an option of multiple choice between fun, work, communication, shopping, and information.

Attitude and beliefs towards shopping

To reduce the length of the questionnaire, the author has chosen the following tree questions, that express the shopping patterns the most:

1) 'Please, indicate key features you are taking into consideration when deciding to buy something'. The respondents were allowed to choose between Price/Promotions, Product features, Online reviews, Trusted brand, Convenience (Availability, time constraints), and Quality.

2) 'Please, define your usual payment method when making purchases'. The multiple-choice between cash and credit/debit card was proposed.

3) 'Please, select the product categories you are most frequently buying through the Internet'. The author selected the answer options among the most widespread product categories which are sold by the largest Ukrainian market places: Pharmacy and healthcare products, Food and beverages, Cosmetics and toiletries, Clothes, shoes and jewelry, Electronics, Furniture, Books and educational materials.

Online behavior (Factors)

After reviewing the related literature on online consumer behavior determination, the author reached the conclusion that price, trust and convenience (in different interpretations) are the most widely used and significant factors affecting the decision to buy online.

To assess how the respondent feels towards each of these tree factors, the Fishbein Model (theory of reasoned action) was applied. The model distinguishes three components of attitude: consumer attitude towards a particular object (A_0); beliefs that this object has particular attributes as a result of consumer's prior experience or knowledge (B_i); and the subjective assessment whether the object has an important attribute (E_i).

Fishbein Model concept proposes that the attitude towards a particular object is evaluated by the aggregated set of beliefs about the object's attributes weighted by the evaluation of these attributes:

$$A_0 = \sum_{i=1}^{n} B_i E_i$$

In order to identify the belief and evaluation towards price, trust and convenience, measurement scales were proposed to the respondents. To clearly represent the application of this type of answer option in the research questionnaire, the following examples of question formation and rating are provided:

Question: What is the respondent's attitude towards **price**?

Belief and specific attitudes measurement:

I consider, that buying goods online saves me money.

Not at all	1	2	3	4	5	6	7	Absolutely yes	(Rating scale)
	(-3)	(-2)	(-1)	(0)	(1)	(2)	(3)		(Calculating scale)

Evaluation of weights for each attribute:

The advantage of price comparison over different websites is important for me.

Not at all	1	2	3	4	5	6	7	Very important	(Rating scale)
	(-3)	(-2)	(-1)	(0)	(1)	(2)	(3)		(Calculating scale)

The scale from 1 to 7 was presented to the respondents, but then converted when we calculate the values, to clearly define the negative attitude an attribute contributes to.

The examples of the questions asked to evaluate other factors are listed below.

*Question: What is the respondent's attitude towards **trust**?*

Belief and specific attitudes measurement:

Online purchasing and the Internet as a distribution channel are safe.

Evaluation of weights for each attribute:

Security when purchasing online is important for me.

Question: What is the respondent's attitude towards ***convenience****?*

Belief and specific attitudes measurement:

In my opinion, it is more convenient to shop online, than offline.

Evaluation of weights for each attribute:

Being able to purchase goods online at any time of the day is important for me.

Table 3. Conversion of Fishbein values to Binned values

Binned value	Fishbein value	Attitude
1	< - 8	Negative
2	-7 – -5	
3	-4 – -2	
4	-1 – 1	Neither
5	2 – 4	
6	5 – 7	
7	8 >	Positive

Source: Hasslinger, Hodzic, Opazo, 2007

3.3 Logit regression model

To define what drives the consumer to choose in favor of online shopping, the logistic regression model, with a binary variable that determines whether the person makes most of the purchases online being dependent, was estimated. The following approach was

chosen as it is the most appropriate regression analysis in cases when a dependent variable is dichotomous (binary). Binary Logistic Regression could give an answer to the following question: How does the probability of a person to make most of the purchases using the Internet change depending on different perceptions regarding aspects of shopping and controlling for a set of demographic/webographic characteristics attributable to a person?

The choice of variables was primarily motivated by the related literature reviewed by an author and the significance of the variables chosen in the related studies. For instance, according to the KPMG Online Consumer Report stage of life and income levels were primary factors driving both online and offline shopping.

Since the variables Age, Education, Income and Time spent online are categorical, they could not be treated as and further interpreted as simple numerical variables. Therefore, a set of dummies for each variable was created which an example of such variables, Age demonstrates:

To build a regression and taking Age as an example, the regression will be in a particular form:

$$Y_i = \beta_1 \delta_i^{Age_1} + \beta_2 \delta_i^{Age_3} + \beta_3 \delta_i^{Age_4} + \beta_4 \delta_i^{Age_5} + \cdots$$

Initially, we had 5 age categories: 1: Under 18; 2: 18-25; 3: 26-40; 4: 41-55; 5: Over 56. However, in this case, the people Aged 18-25 (Age==2) will be a base category.

The same exercise was repeated for the remaining categorical variables. The reference categories for variables Education, Income and Time spent online are 'Bachelor's degree', 'Less than 1 minimum wage' and 'More than 3 hours', respectively. The base category was chosen in a way to capture an average person from the sample.

There is a widely spread perception that those born during the period of technological advancement should feel more comfortable with day-by-day Internet usage,

so they should feel more comfortable with online shopping. The more educated the person is, the more qualified job it is expected to have, and thus the more access to the Internet is needed by this person for the everyday purposes and the more accustomed the person is to buy online. During the data analysis process, the author will attempt to confirm or reject those hypotheses.

Regarding all the factors obtained using the Fishbein model, the author expects each of them to have a positive effect on the probability of making most purchases online. This could be explained by the perception that those who think that buying online is cheap, convenient and trustful are more likely to be regular online shoppers.

If considering purposes, features and categories (more detailed variables explanation is provided in Table 7) the effect is highly unpredictable and will differ according to which option the person has chosen from the proposed list.

Table 4. Expectations regarding the signs of independent variables

Explanatory variables	**Expected sign**
Time spent online	+
Binary variables for the key purpose to use Internet	? (varies by purpose)
Binary variables for the most important features when deciding to buy	? (varies on feature)
Binary variables for product categories bought online	? (varies by category)
Factor: Price	+
Factor: Convenience	+
Factor: Trust	+
Gender	?
Age	-
Education	+
Income	?

CHAPTER 4. DATA

4.1 Frequency distribution of variables

Overall, the sample size of 357 respondents was acquired to represent the universe of a study. Table 4 is drawn to provide an overview of socio-economic background of the sample of respondents. The general characteristics of the sample (based on 5 questions about personal information) are as follows:

1. 70% of the sample are women, 30% are men.

2. The sample was divided by 4 key groups based on the generation the respondents were born into. Thus, the age distribution of the respondents is as follows:

- people under the age of 18 – "Gen Z (born after 1995)" – 6%;
- people aged 18-25 – "Gen Z (born after 1995)" – 58%;
- people aged 26-40 – "Millennials (born 1980-1994)" – 23%;
- people aged 41-55 – "Generation X (1966-1979)" – 11%;
- people over the age of 56 – "Baby Boomers (born 1946-1965)" – 2%.

3. 94% of respondents currently live in Ukraine, 6% of them have Ukrainian citizenship, but currently live abroad (in Western Europe, CIS countries and the US).

4. The vast majority of respondents have a bachelor's degree as the highest level of their education - 40%. Also, in the sample there are respondents with a master's degree - 27%, 21% of respondents graduated from high school, 10% of people with technical education and 2% of people with another, not mentioned above level of education.

5. The distribution of respondents by level of income is as follows:

- 59% have a low monthly income level, that is less than 2 monthly minimum wages;
- 26% of respondents have an income within 3-5 minimum wages, so they belong to the middle-income category;
- 15% of respondents have a monthly income of more than 5 minimum wages, so they belong to the high-income category.

Table 5. Demographic profile of respondents

Variables	Category	Count	Percentage
Gender	Female	251	70%
	Male	106	30%
Age	Less than 18	20	6%
	18-25	208	58%
	26-40	81	23%
	41-55	40	11%
	Above 56	8	2%
Country	Ukraine	335	94%
	Other	22	6%
Education	No schooling	4	1%
	High school	75	21%
	Trade/technical/vocational training	36	10%
	Bachelor's degree	142	40%
	Master's degree	95	27%
	Doctorate degree	5	1%
Income	Less than 1 minimum wage	95	27%
	1-2 minimum wages	116	32%
	3-5 minimum wages	93	26%
	5-7 minimum wages	31	9%
	Above 7 minimum wages	22	6%

With an aim to determine how accustomed the respondents are to the comprehensive impact of the Internet and to define the role it plays in their everyday life,

two questions about the time spent in Internet and purposes of Internet usage were asked. (Table 5) The general webographic portrait of the sample is as follows:

1. Majority of the respondents spend more than 3h on the daily basis online – 59%. At the same time, just a small fraction of a sample use Internet rarely, and spend less than 1 hour online per a day – 9%. A third of all respondents appeared to be those, whose daily time spent online varies between 1 and 3 hours.

2. Unsurprisingly, the most widespread purpose to use Internet was communication, 69% respondents selected it as one of the key ones. Information source appeared to be just slightly less popular usage purpose (67% of respondents chose it). Slightly more than half of respondents most frequently use Internet for fun(entertainment) and working purposes. Minority defined shopping among the key purposes to go online, 36% of the sample.

Table 6. Webographic profile of respondents

Variables	Category	Count	Percentage
Time spent online	Up to 1 h	31	9%
	1h - 3h	117	33%
	More than 3h	209	59%
Key purposes to use Internet	Fun	211	59%
	Work	193	54%
	Communication	247	69%
	Shopping	128	36%
	Information	239	67%

Understanding of the general perception of shopping was extremely significant for further research (Table 6). Among the variables from this section are two, which will be used in further econometric analysis as dependent variables:

1. Frequency of online shopping. A half of respondents make online purchases once a month (50%). A smaller fraction of 17% are frequent online shoppers, so that they

buy online on a weekly basis. A third of the sample make online purchases once a year, so they are not accustomed to buy online to a large extent.

2. A binary variable to determine whether the consumer's most purchases are made online. Majority of respondents are on average more used to the offline shopping (78%), so that they usually buy goods in the physical shops. Among 357 respondents only 22% most often make purchases online.

Table 7. Respondents' attitude and beliefs towards shopping

Variables	Category	Count	Percentage
Frequency of online shopping	Weekly	59	17%
	Monthly	177	50%
	Annually	121	34%
Most of purchases are made online	Yes	79	22%
	No	278	78%
Most important features when deciding to buy	Price	246	69%
	Product features	127	36%
	Online reviews	147	41%
	Trusted brand	162	45%
	Convenience (time constraints)	124	35%
	Quality	226	63%
Usual payment method	Cash	83	23%
	Credit/Debit card	274	77%
Most frequently bought categories via Internet	Pharmacy and healthcare products	33	9%
	Food and beverages	32	9%
	Cosmetics and toiletries	195	55%
	Clothes, shoes and jewelry	220	62%
	Electronics	135	38%
	Furniture	17	5%
	Books and educational materials	113	32%

Among the features usually taken into consideration when deciding whether to buy, the apparent leaders are price and quantity, with the fractions of respondents considering them as important being 69% and 63% respectively. Online reviews are sufficient for 41% of consumers and for 45% of them, it is critical whether the brand of a product could be regarded as trusted. Special product features most frequently determine a buying decision of 36% of the respondents. The least common factor is convenience, a minority of 35% are influenced by the time constraints, which appear on the way of receiving the purchase.

The most common payment method over the respondents was "Credit/Debit card" (77%), which is not surprising taking into consideration the rapid growth in the share of non-cash transactions both in volume and quantity. Still, almost a quarter (23%) of consumers got used to paying for their purchases in cash.

The online shopping landscape is gradually changing in terms of the product categories being bought online. Over the obtained sample, the leading product types are Clothes, shoes and jewelry (62% of respondents selected it among most frequently bought) and Cosmetics and toiletries (55%). Another quite popular categories are Electronics and Books and educational materials, as 38% and 32% of respondents chose them. It appeared to be quite uncommon for the consumers surveyed to buy Pharmacy and healthcare products, Food and beverages and Furniture via the Internet, with the fractions of consumers who chose these product types being 9%, 9%, and 5% respectively.

4.2 Preliminary analysis of data

One option that could provide a profound understanding of the sample of respondents is to define their inclination to most frequently shop via the Internet depending on their demographics.

In general, 22% of males and 23% of females are making most of their purchases online. Thus, among the respondents, this buying pattern was similar according to gender. In addition, women, in general, spend more time online than men, as according to the

survey results 60% of women spend more than 3 hours per day using the Internet, it is 4 p.p. higher indication than for men. 'Generation Z' was the most exposed to online shopping. 27% of respondents aged 18-25 are mainly buying goods and services online, while only 8% of those aged 41-55 have the same buying pattern.

It is notable, that 26% of respondents who mostly use credit/debit card for the regular payments are used to mostly do shopping via the Internet. Among those who prefer cash as a payment method, a much smaller share of 11% make most of the purchases online.

Indeed, the most frequently bought categories via the Internet differ according to gender. If considering the top 3 categories chosen from the proposed list the patterns are the following:

1. Females most often buy cosmetics and toiletries online (71% among the respondents). The category 'Cloth, shoes, and jewelry' appeared to be in second place by popularity, as 67% of women have chosen it among the most popular. Finally, the third by popularity is the category 'Books and education materials', for 35% of females it was in the list of most frequently bought.

2. As for the male, the category 'Electronics' is the leader by the popularity, 66% of men have chosen it. Categories 'Cloth, shoes and jewelry' and 'Books and education materials' are on the second and third places, with the percentages of respondents who buy them online most frequently being 50% and 25% respectively.

Some insightful patterns could be seen when considering the 'Most important features when deciding to buy' answers distribution by different demographics. While generally price appeared to be critical for the vast majority of respondents, for high-income people and Gen X the quality was in the first place. Besides, although the online reviews

were not in general among the top three features when deciding whether to buy or not, they appeared to be on the 3rd place for low-income people and Millennials.

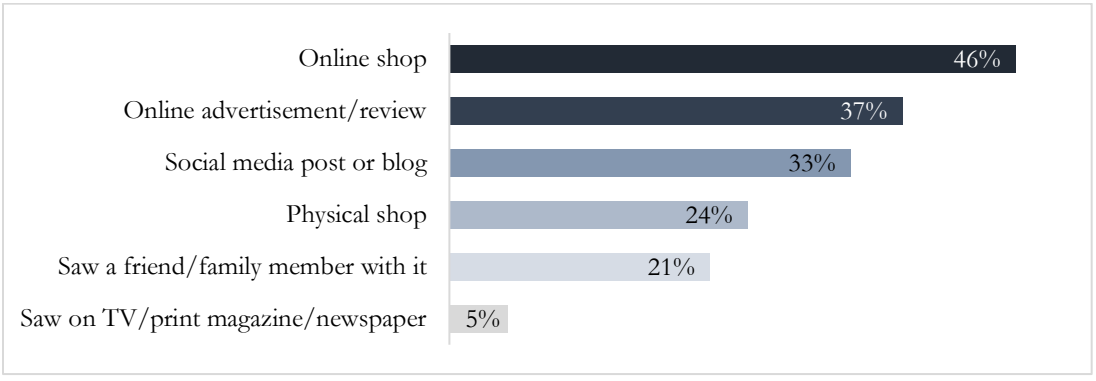
4.3 'Path to purchase' journey

The concept of 'Path to purchase' is critical for the business owners with a desire to deeply understand their customers' perceptions through the buying process. According to this concept each consumer experiences for main stages - awareness, consideration, conversion, and evaluation – up to the point of the final purchase. Over the latest decades, the general process of moving through the journey evolved considerably. The comprehensive growth of e-commerce as a consequence of rapid Internet penetration and digitalization of all the everyday processes is basically the core driver of this transformation.

Aimed to figure out this process in detail, the author decided to ask the respondents of the survey four questions regarding the last purchase an individual has made online.

Awareness. Technological advancements unlocked various unfamiliar ways for consumers to acquire information related to the goods or services present on the market. For those who sell these trends create a wider spectrum of opportunities to reach the customer and familiarize him with the particular object.

Figure 5. Distribution of key touchpoints of product awareness by preference



The author was interested in comparing the influence of online versus offline touchpoints. Thus, the respondents were asked to define where the most recent product was seen for the first time. Among the proposed answers three were associated with online channels (Online shop, Online advertisement/review, Social media post or blog) and another three were suggesting offline touchpoints (Physical shop, Saw a friend/family member with it, Saw on TV/print magazine/newspaper). The results of the survey evidenced that 83% of the respondents selected one or more online touchpoints which led them to product awareness, while almost a twice smaller proportion of 42% cited at least one offline channel. The majority (46%) became aware of the product they bought online for the last time through the online shop. At the same time, just a small fraction of 5% appeared to see the product on TV/print magazines/newspapers. (Figure 5)

If considering the differences in results according to gender, similar proportions of female and male cited online channels as the primary sources. The difference is noticeable if taking into consideration the percentages of those, whose first touchpoint is related to the offline channels. Women were more exposed to choose an offline channel – 45% of them, while among men 36% got to know about the product from offline sources.

Table 8. Distribution of touchpoints of product awareness by age

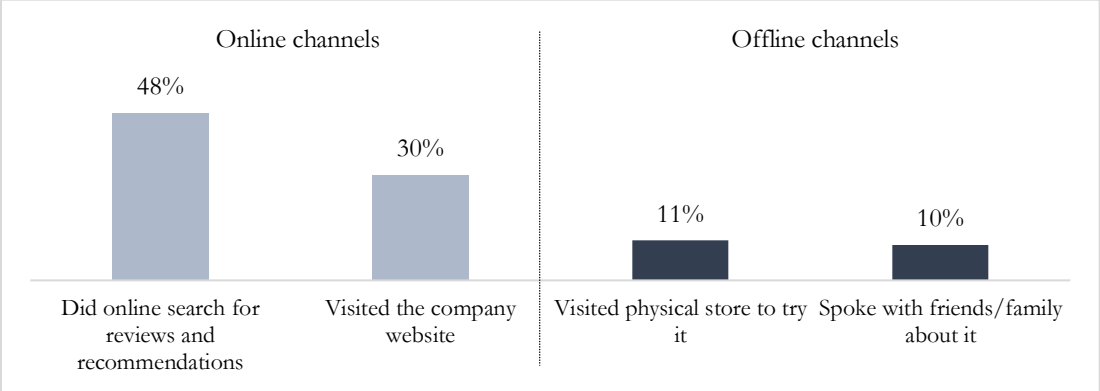
Age category	% of those, who became aware through ***online*** channel	% of those, who became aware through ***offline*** channel
Less than 18	90%	45%
18-25	87%	38%
26-40	84%	43%
41-55	70%	55%
Above 56	50%	63%

If taking the age of the respondent into consideration, other fascinating patterns could be observed. Among people aged under 18, 90% cited the online channel as an initial touchpoint with the product last bought online, while 50% of those aged above 56

demonstrated a similar pattern. Simultaneously, 45% of those aged under 18 cited at least one offline channel, while 63% of respondents aged above 56 did the same. (Table 8) Therefore, the older the person becomes the less exposed it is to search for a product needed via the Internet. Millennials demonstrated the tendencies which are the closest to the average among the sample.

Consideration. The prevalence of online channels becomes even more notable under the stage of further product evaluation. The most preferred way to further consider whether to buy a product or nor was to conduct an online search for reviews and recommendations. It was chosen by 48% of respondents. Second by popularity option was to visit the official website of the company-producer to look for the details, 30% selected it. Offline channels were overall preferred by 21% of the respondents, who either visited a physical store or discussed the product with friends/family. (Figure 6)

Figure 6. Channels used to research the product after initial touchpoint by preference

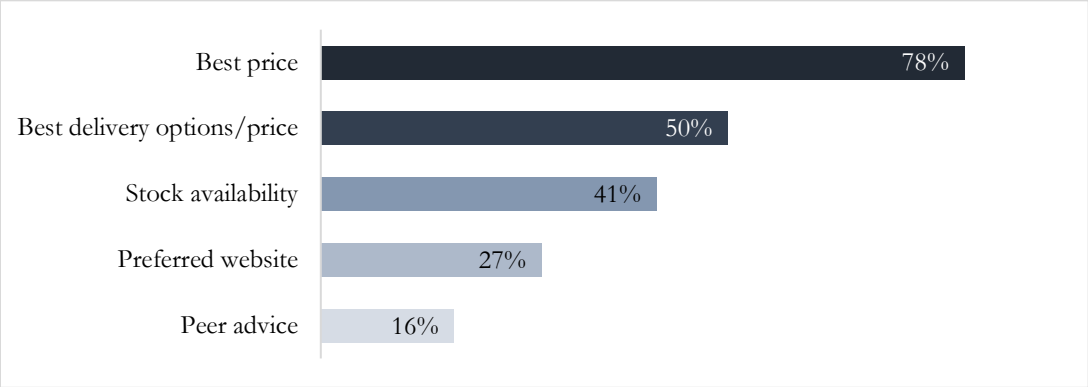


Conversion. During the stage of conversion, the consumer is making a final decision and weights all pros and cons of the products. Thus, the respondents were asked to select the most important product attributes which triggered the purchase.

Unsurprisingly, most of the respondents' decisions were driven by an acceptable price option, as for 78% of respondents 'Best price' appeared to be the most important

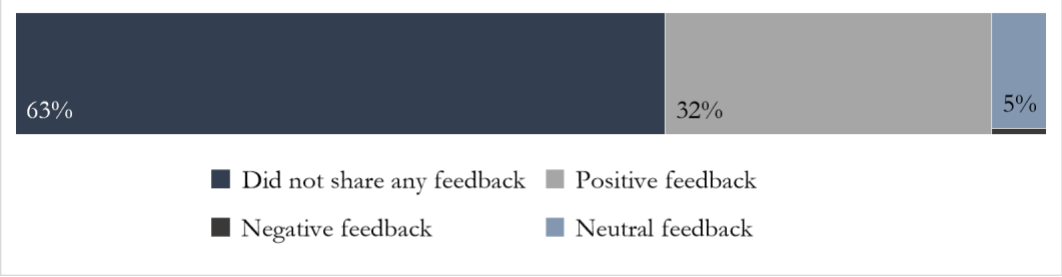
product attribute. Half of the respondents considered the convenience and price of the delivery as a critical attribute. 41% would not have bought the product if it was not available in stock. For 27% of respondents, the availability of the product on a website they know and trust is the core factor in the process of decision-making. A minority of 16% were highly evaluating the advice of their peers. (Figure 7)

Figure 7. Most important attributes, when deciding where to buy



Evaluation. The post-purchase relationship between a consumer and a product seller is not something to neglect. In terms of developing a long-term relationship with a customer, a seller must deliver an enhancing experience, which then will be translated into positive feedback. Furthermore, negative feedback has a similar degree of importance, as by analyzing the concerns of a customer further product improvements could be implemented.

Figure 8. Distribution of the types of shared feedback over the survey respondents



Among the sample, 63% of respondents did not provide any feedback related to the last purchase they made via the Internet. Women shared their opinion more frequently than men, 40% versus 31%. Only one person out of 357 pointed out that the feedback shared was negative. A positive evaluation was provided by 32% of people surveyed, while the remaining 5% neutrally described their experience. (Figure 8) Age distribution of those who did not share any feedback is the following: respondents aged 41-55 were most unwilling to share their opinions – 78%; the pattern for people aged above 56 was quite similar – 75% did not leave any feedback; among age categories of those below 18 and those aged 26-40 the evaluation was not provided by 65% and 63% respectively; respondents aged 18-25 were least reluctant to share – 60% did not do that.

CHAPTER 5. RESULTS

5.1. Logit regression model output

It is worth mentioning that not all of the factors from the initial dataset appeared to have a significant effect. As there are only few significant ones, the author decided to skip the interpretation of insignificant ones because they do not seem to have any effect on the probability of making online purchases. The selected results for the significant variables with their estimated coefficients, odds ratios, and marginal effects are represented in Table 7. Also, all the full regression results are reported in Appendix B.

The results show, that the odds of making most of the purchases via the Internet for those who hold a Master's degree are 3.5 higher compared to being a regular online shopper with a Bachelor's degree, when controlling for all other factors. This result is in line with a previous study of Allred, Smith, and Swinyard (2006), who stated that individuals with higher level of education are more exposed to be classified as typical online shoppers.

The likelihood to make most purchases online for people who earn 1-2 minimum wages is 16.1 p.p. higher than for the ones who earn less than one minimum wage, ceteris paribus. Moreover, compared with the lowest income category, the probability of buying mostly online for people who are paid 3-5 minimum wages is 19.9 p.p. higher and 28.9 p.p. higher for those earning 5-7 minimum wages, respectively. Therefore, richer people are more accustomed to shopping via the Internet in the majority of cases. This result is consistent with a study of Siu and Cheng (2001), who state that the monthly income level of an individual is classified as a key factor determining a potential online shopping adopter. It also confirms findings in a study of Allred, Smith, and Swinyard (2006) who listed 'wealthy' among the characteristics of active e-shoppers. Moreover, the results also coincide with the evidence from the study of Donuthou and Garicia (1999), who stated 'rich' among the characteristics of an online buyer.

Table 9. Estimation results: Variables with significant effect

Dependent variable	Estimate	Odds	Marginal effect
Education Reference Category - 'Bachelor's degree'			
Education: **Master's Degree**	1.261*** (0.462)	3.530	0.162
Income Reference Category - 'Less than 1 minimum wage'			
Income: **1-2 minimum wages**	1.249** (0.520)	3.487	0.161
Income: **3-5 minimum wages**	1.547*** (0.532)	4.699	0.199
Income: **5-7 minimum wages**	2.243*** (0.730)	9.419	0.289
Time Spent Online Reference Category - 'More than 3h'			
Time spent online: **1h - 3h**	-0.698* (0.397)	0.498	-0.090
Key purpose to use Internet: **Shopping**	0.840** (0.395)	2.316	0.108
Key purpose to use Internet: **Work**	-0.963** (0.403)	0.382	-0.124
Most important feature: **Trusted brand**	0.612* (0.353)	1.843	0.079
Most important feature: **Price**	0.705* (0.432)	2.024	0.091
Most important feature: **Product features**	-0.806** (0.376)	0.446	-0.104
Most frequently bought categories via Internet: **Food and beverages**	1.337** (0.612)	3.806	0.172
Most frequently bought categories via Internet: **Cloth**	1.982*** (0.481)	7.257	0.255

Table 9 - Continued

Most frequently bought categories via Internet: **Books**	0.963*** (0.362)	2.619	0.124

Factor: **Price**	0.123** (0.048)	1.130	0.016

Note: *p<0.1; **p<0.05; ***p<0.01

Then, the odds of being a regular online shopper for those who spend approximately 1h - 3h per day using the Internet is 0.50 times that of buying using online channels mostly and spending more than 3h per day via the Internet, when controlling for all other variables. Therefore, the more daily time you devote to being online, the more inclined you are to buying goods and services also using online channels. The result is consistent with a study made by Teo and Yu (2005), who indicated that the buyer who does not have much online experience has lower probability of buying online.

The fact that the person uses the Internet mainly for working processes decreases the likelihood to buy goods or services online by 12.4 p.p.

If the trusted brand is a critical factor for the person when deciding whether to spend money on something, this person is almost twice more likely to make most of the purchases online (the likelihood is 84% higher), than the person for whom this feature is not important at all. If the price is considered critical when making such a decision, the person is more than twice more likely to use online shopping in the majority of cases. For the one, who takes into consideration the special product features mainly, the likelihood of being an online-buyer is 55% lower.

If among the most frequently bought categories online, the one has chosen books and educational materials, this person is more than twice more likely to buy most of the goods via the Internet in general. Buying food most frequently online makes a person 280% more likely to make most of the purchases online. If the person buys cloth, shoes, and jewelry online in most cases, he or she is 6 times more likely to be an online shopper.

Finally, among the factors, which were initially chosen by the author and assessed using the Fishbein Model, only Price appeared to be significant in the logit model. The

results could be interpreted in the following way: one level increase in the individual's attitude towards price (starting from negative and ending with positive) increases the probability to be used to make purchases mostly via the Internet by 1.7 p.p. Therefore, the people who consider, that buying goods online saves him or her money and treat this factor as important, are probably the possible online-buyers. This result is in line with a study of Teo and Yu (2005), who indicated that a perceived transaction cost could have a considerable impact on an online buying decision.

McFadden's Pseudo R-squared value of 30.87% indicates the overall goodness of fit of the logit model.

CHAPTER 6. CONCLUSIONS AND RECOMMENDATIONS

Despite all the limitations of the Ukrainian online environment, the e-commerce market demonstrates a rapid growth year by year, being one of the most fast-growing among European countries. Among the factors which restrict even more rapid market expansion could be highlighted the below-average level of internet penetration, the complexity of establishment of a conscientious logistics system, comparably low percentage of the internet users accustomed to regular online shopping. The mitigation of all these issues together with the proper application of several existing growth drivers will indeed boost the pace of growth to the new levels. To be more precise, among the triggers of the possible market growth expansion should be mentioned the high levels of Internet availability and affordability in the country, the readiness of people to extend its usage, rapid implementation of cashless payments into everyday life.

The understanding that the market is still in its infancy and, thus, has outstanding growth potential, creates a competition between the retailers for capturing the new type of consumer attention. The formation of an online buyer profile and deep reasoning behind his buying choices and patterns becomes critical in the modern competitive landscape. This data and knowledge could further be used in the process of development and implementation of the marketing strategy of a retailer, which indeed could be the core determinant of his market success.

The econometric model was estimated on the dataset which was obtained from a sociological survey of 357 respondents all over Ukraine. The results provide the factors which have a significant impact on the decision of the consumer to make most of the purchases via the Internet. In line with studies on other countries, the following factors affect the consumer online buying behavior: education, income, daily time spent online, key purpose to use Internet, most important features taken into consideration when deciding to make a purchase, product categories most frequently bought via the Internet,

and price as a factor (the perception of a person that buying goods online saves money and that this fact as important).

The patterns, which have been identified by the author are listed below:

1. Education is a factor with a positive impact. With each additional level of education, the person completed, the likelihood that the person is a regular online shopper goes up.

2. The higher is the income level of the person is the more inclined this person is to make most of the purchases via the internet.

3. The level of online experience and computer literacy determined by the daily time an individual spends online positively influences the probability to be an online shopping adopter.

4. The fact that the trusted and famous brand is the most important feature for the person when deciding whether to buy a product increases the probability that this person is a frequent online buyer. Thus, the conclusion could be drawn that people indeed consider the Internet as a trusted marketplace to buy expensive goods there. Probably, the fact that the price of such goods is usually smaller in online marketplaces than in offline retail stores also plays a considerable role here. It is also supported to a high extent by the fact that those who mainly take the price of a good into consideration when making a buying decision, also have a higher likelihood to buy most of the goods via the Internet.

5. The individual who pays attention to the product special features when deciding whether to buy or not have a smaller likelihood to be an online buyer. This could be attributed to the potentiality that this person prefers to physically touch and see the product before buying.

6. People who have chosen cloth, books, and food among the categories most frequently bought through the Internet are more likely to make most of the purchases online instead of online.

7. Finally, the more the person is confident that buying goods online saves money and treats this fact as important, the higher is the probability that this person is an online buyer.

Based on the output from the econometric model and the analysis of the Ukrainian e-commerce market, the author provides the following recommendations for the business:

1. Taking into consideration the accelerated growth of the market and the growth of the consumers ready to make online purchases, the transition to online is undeniable for the retail industry. The retailers of any size and business model are now forced to think about any possible way to be present via the online channels. On top of that, they should complete the transition to online as soon as possible, since the timing becomes critical factor in this case.

2. A great emphasis should be made on approaching the consumer segments, which are now penetrated to the least extent – older people, less educated, with low-income levels and who spend little time via the Internet. Marketing strategies should be adjusted in order to reach these segments.

3. The less penetrated consumer segments should be notified about the online presence of the brands or retail shops they regularly buy offline. Then, they should be made aware of the benefits of buying via the Internet.

4. Online retailers should think about the options which could provide the buyer with the possibility to try the product on, touch or compare with a similar one before the final purchase.

5. Marketers should work on persuading the buyers that buying online provides them with the opportunity to save money. They can somehow show the comparison of the price for a particular good presented in an offline shop with the price via the online channel. The emphasize could be made on the total sum saved in case of the decision to buy online.

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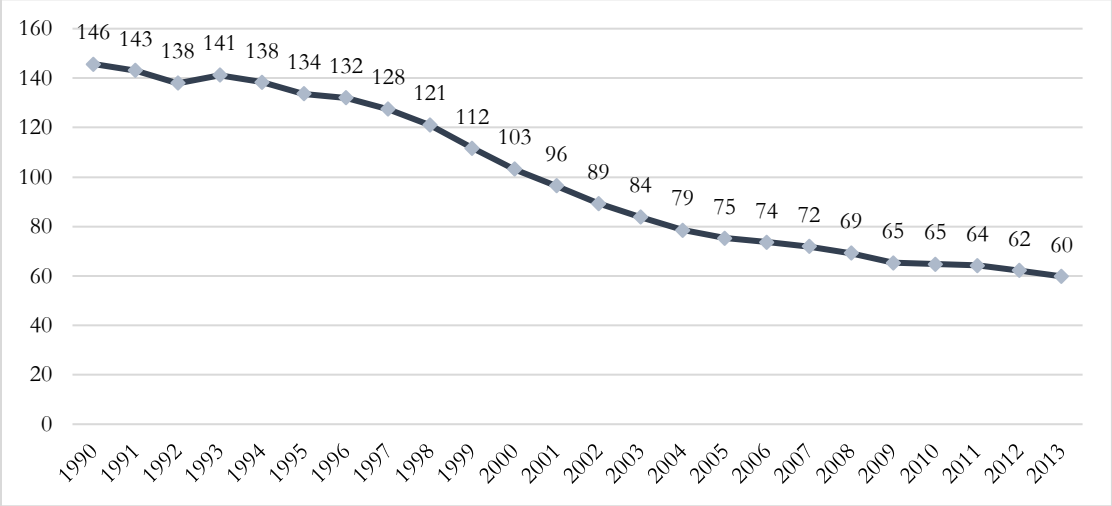
APPENDIX A

Figure 9. Availability of retail trade enterprises (legal entities) at the end of the year, thousand units



Source: SSSU

APPENDIX B

Table 10. Estimation results: Logistic regression

Dependent variable	Estimate	Odds	Marginal effect
Gender	-0.145 (0.488)	0.865	-0.019
Age Reference Category - '18-25'			
Age: **Less than 18**	0.044 (0.940)	0.957	-0.006
Age: **26-40**	-0.513 (1.038)	0.573	-0.072
Age: **41-55**	-1.357 (1.274)	0.246	-0.180
Age: **Above 56**	-16.032 (1,153.808)	0.00000	-2.071
Country	-0.055 (0.705)	0.947	-0.007
Education Reference Category - 'Bachelor's degree'			
Education: **No schooling**	-0.331 (1.324)	0.718	-0.043
Education: **High school**	0.130 (0.505)	1.139	0.017
Education: **Trade/technical/vocational training**	-0.053 (0.972)	0.949	-0.007
Education: **Master's degree**	1.261*** (0.462)	3.530	0.162
Education: **Doctorate degree**	-16.110 (1,389.777)	0.00000	-2.075
Income Reference Category - 'Less than 1 minimum wage'			
Income: **1-2 minimum wages**	1.249** (0.520)	3.487	0.161

Table 10 - Continued

Income: **3-5 minimum wages**	1.547*** (0.532)	4.699	0.199
Income: **5-7 minimum wages**	2.243*** (0.730)	9.419	0.289
Income: **Above 7 minimum wages**	1.101 (0.901)	3.006	0.142
Time Spent Online Reference Category - 'More than 3h'			
Time spent online: **Up to 1 h**	-0.598 (0.915)	0.550	-0.077
Time spent online: **1h - 3h**	-0.698* (0.397)	0.498	-0.090
Key purpose to use Internet: **Communication**	-0.445 (0.415)	0.641	-0.057
Key purpose to use Internet: **Fun**	-0.223 (0.365)	0.800	-0.029
Key purpose to use Internet: **Information**	-0.582 (0.370)	0.559	-0.075
Key purpose to use Internet: **Shopping**	0.840** (0.395)	2.316	0.108
Key purpose to use Internet: **Work**	-0.963** (0.403)	0.382	-0.124
Most important feature: **Trusted brand**	0.612* (0.353)	1.843	0.079
Most important feature: **Convenience**	-0.288 (0.359)	0.749	-0.037
Most important feature: **Price**	0.705* (0.432)	2.024	0.091
Most important feature: **Product features**	-0.806** (0.376)	0.446	-0.104
Most important feature: **Quality**	0.465 (0.392)	1.592	0.060
Most important feature: **Reviews**	-0.141 (0.345)	0.869	-0.018

Table 10 - Continued

Preferred payment method	-0.583 (0.483)	0.558	-0.075
Most frequently bought categories via Internet: **Pharmacy and healthcare**	0.464 (0.590)	1.590	0.060
Most frequently bought categories via Internet: **Food and beverages**	1.337** (0.612)	3.806	0.172
Most frequently bought categories via Internet: **Cosmetics**	0.110 (0.431)	1.117	0.014
Most frequently bought categories via Internet: **Cloth**	1.982*** (0.481)	7.257	0.255
Most frequently bought categories via Internet: **Electronics**	-0.019 (0.389)	0.981	-0.002
Most frequently bought categories via Internet: **Furniture**	-0.324 (0.674)	0.723	-0.042
Most frequently bought categories via Internet: **Books**	0.963*** (0.362)	2.619	0.124
Factor: **Price**	0.123** (0.048)	1.130	0.016
Factor: **Trust**	0.006 (0.044)	1.006	0.001
Factor: **Convenience**	0.052 (0.047)	1.053	0.007

Note: *p<0.1; **p<0.05; ***p<0.01