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ASSESSMENT OF THE USE OF ELECTRONIC COMMERCE BY POLISH CONSUMERS

The subject-matter of the article is to assess how Polish consumers take advantage of e-commerce on the basis of own research. The research has revealed that the increasing number of the Internet users decide to shop online, virtually in all areas of goods. The expenditures on the Internet shopping in most cases constitute a relatively significant part of total spending incurred by the study sample. Consumers are gradually becoming less apprehensive towards this way of shopping and more and more frequently choose it instead of traditional shopping. Undoubtedly, e-commerce in Poland is highly likely to develop dynamically as it has already gained much interest of consumers and their number is on the increase. Yet, the research conducted by the authors has proved that e-commerce will not replace traditional shopping in the current economic reality.

Keywords: consumer behaviour, e-commerce, trade.

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ОЦІНЮВАННЯ ВИКОРИСТАННЯ ЕЛЕКТРОННОЇ ТОРГІВЛІ ПОЛЬСЬКИМИ СПОЖИВАЧАМИ

У статті містяться результати оцінювання використання електронної торгівлі польськими споживачами на основі власних досліджень. Дослідження показали зростаючу кількість користувачів Інтернету, які наважуються купувати в мережі практично за всіма категоріями продуктів. Витрати на покупки в Інтернеті становлять, в більшості випадків, значну частину загальних витрат респондентів. Споживачі поступово втрачають побоювання, пов'язані з цією формою покупок, і все частіше замінюють ними традиційні покупки. Електронна торгівля в Польщі, безсумнівно, має великі перспективи розвитку, користуючись все більшим інтересом і завойовуючи все більшу кількість прихильників. Однак, проведене дослідження показало, що електронна торгівля все-таки не в змозі повністю замінити традиційні форми покупок за нинішніх господарських умов.

Ключові слова: поведінка користувача, електронна торгівля, торгівля.

Рис. 5. Табл. 3. Форм. 3. Літ. 10.

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ОЦЕНКА ИСПОЛЬЗОВАНИЯ ЭЛЕКТРОННОЙ ТОРГОВЛИ ПОЛЬСКИМИ ПОТРЕБИТЕЛЯМИ

В статье содержатся результаты оценки использования электронной торговли польскими потребителями на основании собственных исследований. Исследования показали растущее количество пользователей Интернета, которые решаются покупать в сети практически по всем категориям продуктов. Затраты на покупки в Интернете составляют, в большинстве случаев, значительную часть общих затрат респондентов. Потребители постепенно теряют опасения, связанные с этой формой покупок, и все чаще заменяют ими традиционные покупки. Электронная торговля в Польше, несомненно, имеет большие перспективы развития, пользуясь все большим интересом и завоевывая все большее количество сторонников. Однако, проведенное исследование показало, что электронная торговля все же не в состоянии полностью заменить традиционные формы покупки при нынешних хозяйственных условиях.

Ключевые слова: поведение потребителя, электронная торговля, торговля.

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1. Introduction and theoretical issues.

In the modern economy computer network is no longer an experiment but has become an indispensable part of commerce. Nowadays, nearly all the sectors perceive the expansion of e-commerce as a great opportunity to change and develop their business (Bialoblocki, 2006). It is not only the structure of entities that change but also their functioning. The current development of e-commerce confirms the assertion that the Internet and other networks are transforming into a highly effective online market where numerous transactions are executed (ecommercepolska.pl, 2013). The turnover generated by the companies operating online is becoming significant in total trade balance. It results from the incredible potential of this trade area. Almost everything can be purchased over the net, in every location in the world, from home and by the use of a computer. What is more, a consumer can instantly see, compare, choose and purchase goods offered by companies located far away from each other (Laudon, Traver, 2004). Hence, constant monitoring and the assessment of exploitation of e-commerce in the world is necessary. The goal of the research set by the authors is to assess how e-commerce is used by Polish consumers.

E-commerce is commonly associated with the sale of goods over the Internet. Such understanding of the term equals commodity circulation but its real meaning is much broader (Swierczynska-Kaczor, Kossecki, 2008). It is worth mentioning that the EU Acts, including the E-Commerce Directive, do not offer its definition but use it only as a term. UNCITRAL (United Nation Commission on International Trade Law) offers a broad definition stating that e-commerce comprises all kinds of transactions in cross-border trade executed through electronic data exchange which do not require paper (www.uncitral.org, 2013). The most common of all is the world wide web, which facilitates the delivery a wide variety of information in form of texts, images and/or sounds placed on websites and stored on servers, which makes it possible to develop new sites (Kowalik-Banczyk, 2008).

It is easy, fast and instant communication between trading partners bound by virtual commercial contracts that constitutes the essence of e-commerce. The communication in question provides many-sided characteristics of the traded objects, the change of their properties and the consideration for purchasing them, frequently their shipment or even its consumption (for example, paying for watching a movie) (Chmielarz, 2001).

It should be noted that commercial exchanges on the Internet has its own specific characteristics. The most noticeable property is its global, transborder character resulting from the properties of computer networks as such. It means that the activity can be carried out remotely without physical appearance of the parties and that economic subjects can come from various countries all over the world. This characteristic is crucial for both offerers and prospective clients (Grudzewski, Hejduk, 2002). Furthermore, e-commerce is often dematerialized, which means that it takes place through the exchange of electronic data in terms of entering into agreements or their execution.

The exploitation of e-commerce all over the world is on the increase every year. The main prerequisite for its development is common access to computer equipment and the Internet. In most EU countries computer equipment is considered to be commonly accessible, however the access to the Internet appears to be poorer and it

can be regarded as insufficient. Enhanced accessibility to the net facilitates the development of e-commerce. The number of citizens living and doing shopping over the Internet in Great Britain, Denmark, Sweden, Holland and Luxemburg seem to prove that point. Except for the UK, they are the countries where the Internet is the most prevalent. E-commerce in Poland has been developing systematically. According to Top 400 Europe ranking compiled by Internet Retailer, the e-commerce market in Poland has risen from 4,36 bln. USD do 5,85 bln. USD (ecommercepolska.pl, 2013). However, when compared to European it can be safely concluded that the pace of the development is too slow.

Taking into consideration the large number of computers owned by companies and households in Poland it might be wondered why e-commerce is not as popular as it is in other European countries. One of the reasons could be the fact that e-commerce commenced later than in developed Western European countries. The next several years should reveal the potential that Polish e-commerce has (Iwanowska, Merlo, 2011).

2. Research Methodology.

In order to assess the use of e-commerce by Polish consumers diagnostic poll method has been applied. The survey questionnaire was used as a research tool. While estimating the minimum number of the target group indispensable to achieve accuracy the following formula has been applied:

$$n = \frac{u_{\alpha}^2 \sigma^2}{d^2}, \quad (1)$$

where:

n – sample size,

u_{α} – value taken from normal distribution table for a certain significance level α ,

σ – standard deviation in general population,

d – maximum estimation error.

$$n = 1,96^2 * 25^2 / 5^2 = 96,04 \approx 100$$

According to the calculated minimum group size, 100 randomly chosen people were surveyed, 56 of whom were women and 44 men, which represents approximate breakdown of gender structure of the population in Poland. Age bracket – from 18 to 55 years olds.

Chi-squared statistics was used to check how the use of the Internet and purchasing goods over it is dependent on gender, age, education, place of living, occupation and average monthly income of the respondents.

The following formula was used:

$$\chi^2 = \sum_{i=1}^k \sum_{j=1}^k \frac{(n_{ij} - n_{ij}^e)^2}{n_{ij}} \quad (2)$$

The following hypotheses were stated while conducting the test:

a) H_0 – tested qualities X and Y are independent;

b) H_1 – tested qualities X i Y are dependent.

From the Chi-Square tables it was read: $\chi^2_{\alpha;(r-1)(k-1)}$, where the significance level accounts for 0,05.

If: $\chi^2 > \chi^2_{\alpha;(r-1)(k-1)} \rightarrow H_0$ was rejected for H_1 ,

$$\chi^2 < \chi^2_{\alpha/(r-1)(k-1)} \rightarrow \text{no justification for rejection } H_0.$$

When Hypothesis 0 was rejected, Cramer's *V* coefficient was additionally calculated, which enabled the researchers to verify the strength of existing relationship according to the following formula:

$$V = \sqrt{\frac{\chi^2}{n * \min(r-1)(c-1)}}, \tag{3}$$

where: *r* – number of rows,

c – number of columns.

The coefficient ranges from 0 to 1 (perfect association), where 0 means no relationship between the variables. The coefficient is symmetric, which means that if the relative (strength) of an association between two variables is measured it is not important which variable is considered as dependent and which – independent. If the calculated indicator:

- *V*-Cramer's < 0,3 – the relationship was considered low,
- 0,3 < *V*-Cramer's < 0,5 – the relationship was considered moderate,
- *V*-Cramer's > 0,5 – the relationship was considered high.

3. Analysis of the results.

The research conducted by the authors has proved that the respondents who use the Internet favour shopping online (Fig. 1). According to the majority of the respondents such form of purchasing goods is not only safe (90%) but also more convenient than the traditional one – it requires less time (86%) and money (98%). Only a small minority of the respondents (12%) find online shopping risky and complicated, which may result from the fact that they have been using the Internet for less than 5 years, and half of them have never purchased any item over the net.

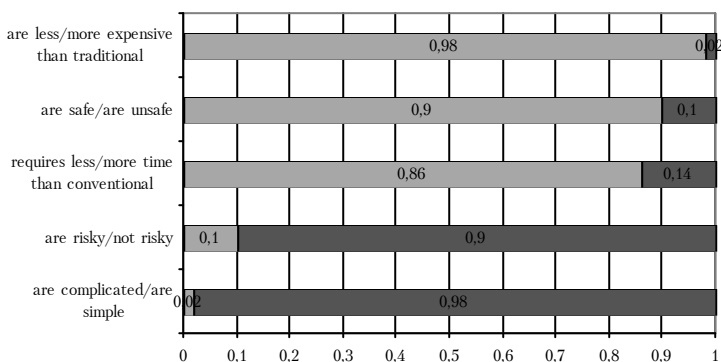


Figure 1. Relative frequency of the opinions on e-shopping

In order to estimate the relationship (or its lack) between the frequency of online shopping and gender, education, place of living, occupation and the average monthly income per one member of a household, Chi-Square test was applied. The research that was carried out shows there is no correlation between e-shopping and gender.

However, all other characteristics of the respondents affect shopping over the Internet (Table 1). Cramer's *V* coefficients show the strongest relationship between

the average monthly income per household and the number of people buying online – the coefficient in this case constitutes 0,56.

Table 1. Relationship between online shopping and particular variables

Variables	χ^2	critical value $\chi^2_{(0.05; 1; 2 \text{ or } 3)}$	The rejection of the H_0 of independence	V-Cramer's
Sex (1)	1,83	3,84	no	-
Age (3)	16,78	7,81	yes	0,41
Education (2)	14,72	5,99	yes	0,38
Place of living (2)	6,08	5,99	yes	0,24
Job (2)	15,73	5,99	yes	0,40
Average monthly income per household member $(2)^*$	31,35	5,99	yes	0,56

* degrees of freedom for each variable

The results of the research demonstrate that the most frequent online shoppers are the ones whose income can be defined as average (500–1500PLN) (Fig. 2.)

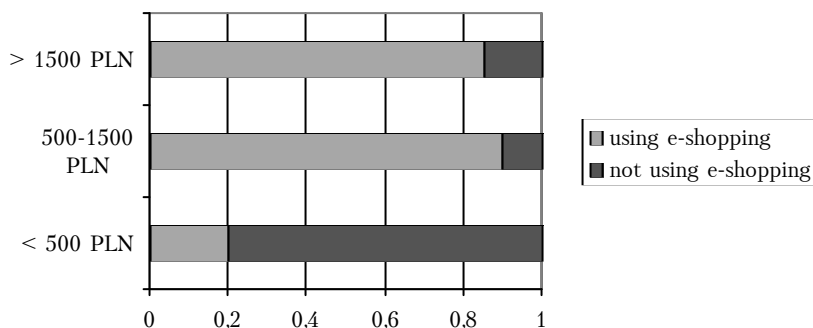


Figure 2. Relative frequency of e-shopping among the people with various income per household member

Moreover, the Chi Square test results present a moderate relationship between the respondents' age, education and occupation and the online shopping. The percentage of people buying over the Internet decreases according to the respondents' age, however, there is no particular age group which would do e-shopping most frequently. E-shopping is the most popular with high school or university graduates. E-shoppers are mainly the people who study or work.

There is a slight relationship between e-shopping and the place of living – the Cramer's V coefficient is just 0,24. That must result from the fact that the Internet is accessible not only in big cities but also in small towns and villages, which makes e-shopping possible in every corner of the country.

The researchers also attempted to define the key drivers behind the respondents' decision to shop online for the first time. It was established that it was a favourable price offer and a wider range of products than in regular shops that motivated them (relative frequency – 0.95–0.96) (Fig. 3). The least important factor appeared to be the possibility of shopping any time (0,72).

Most of the respondents who buy over the Internet – 61 % – are apprehensive about it and only 39% of e-consumers shop “stress-free”. This fact may prove low credibility of Polish e-sellers. In all likelihood what makes e-shops so unreliable is the

short track record of most of the e-shops and auction websites, which has made it impossible for shops to gain a good reputation and win electronic customers' trust.

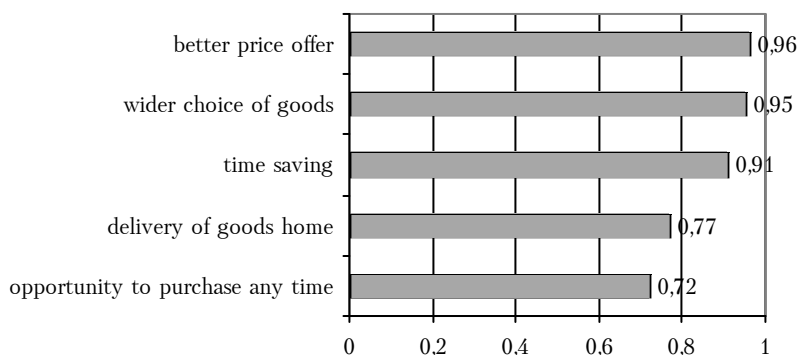


Figure 3. Drivers that convinced the respondents to do e-shopping

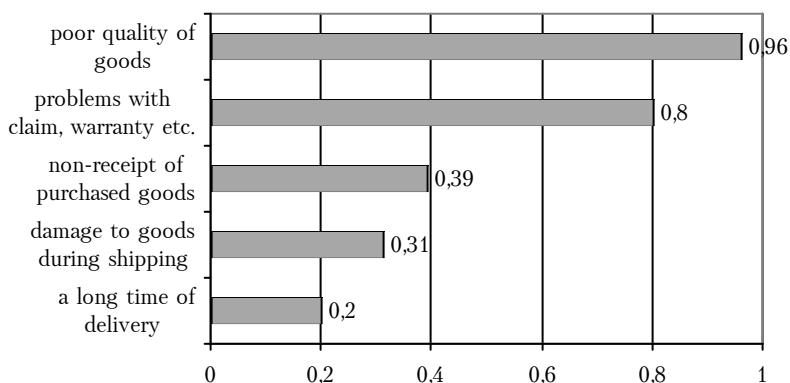


Figure 4. The breakdown of consumers by fears of e-shopping

The results show that most of the e-consumers are apprehensive about e-shopping for fear of receiving goods of poor quality (relative frequency 0.96) and complaints, acknowledge complaints or sheer return of goods that do not meet the consumers' expectations (0,80) (Figure 4). Far fewer respondents are worried about a long time of delivery (0,20) or its brakeage while being shipped (0,31). The data confirms the conclusion that Polish e-sellers are not reliable.

The results of the surveys demonstrate that the relative frequency of e-shopping done several times a year accounts for 0.58, once or several times a month 0,28 and as few as 0,08 people decide to do such transactions more often and buy at least once a week. Only 6 % of the respondents have done e-shopping once in their lifetime.

The key driver that motivates the respondents to do e-shopping is lower delivery costs or delivery free of charge (92%) (Tab. 3.) According to 86% of the respondents the increased reliability of e-sellers would be equally encouraging. The least convincing argument is the wider range of products, which probably results from the fact that now virtually everything can be purchased on the net and the offer is wider than in traditional shops.

Table 3. Arguments for e-shopping according to their significance attributed by consumers

Arguments	Strength of the argument	w_i
Lower cost of delivery or free delivery	A	0,92
Increased reliability of e-sellers	A	0,86
Price promotions	B	0,65
Wider range of products	C	0,12

where: A – strong <0,8-1); B – moderate <0,4-0,8); C – weak <0-0,4).

The findings show that 12% of the people buying over the net have some bad experience. Still, it does not discourage them from taking advantage of it – over half of the consumers intend to buy something online.

To check whether electronic shopping could replace traditional shopping in the future, the respondents were asked about the goods that they would never decide to buy online. Approximately 23% of the respondents said that there were no such products. Now, they can purchase online everything they need. The remaining 77% of the respondents indicated such goods and then choose the groups to which they belong (Figure 5).

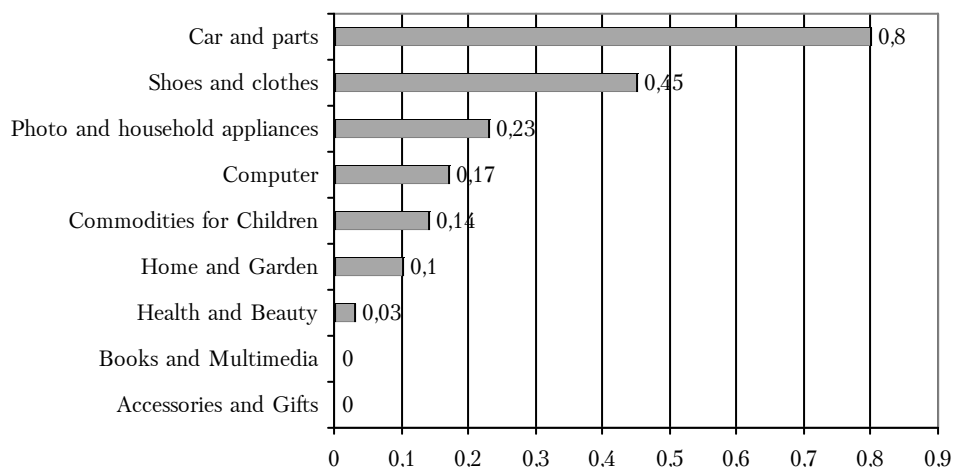


Figure 5. Groups of products which the respondents would not buy online

The respondents are not reluctant to buy books, multimedia, accessories and gifts on the Internet, but as many as 80% of them would not buy certain products, like car and parts. In all probability they would not decide to buy, for example a car without checking it in person. It should be note that many Internet users search for products from this group and then buy them offline. 45% of the respondents would not buy shoes or clothes. In this case consumers cannot try on clothes or they are afraid it might be of poor quality.

4. Conclusions.

E-commerce both in Poland and in the world should develop more and more dynamically. Yet, it should not replace the traditional form of commercial exchanges since many e-shoppers would not decide to purchase certain goods and services that way. This approach is highly likely to remain unchanged for many years to come until

e-enterprises win potential clients' trust and become more reliable. E-commerce is needed, beneficial and is of constantly increasing interest, however, currently it cannot completely replace traditional commercial exchange.

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