RESEARCH ONLINE - PURCHASE OFFLINE - A PHENOMENON AMONG THE YOUNG GENERATION IN THE E-COMMERCE SECTOR

Grzegorz Szymanski, Robert Stanislawski

Lodz University of Technology, Piotrkowska 266, Lodz 90-924, Poland

Abstract

A large number of companies are already operating in the e-commerce area. Online shoppers have a very good opinion about making purchases online. Online shopping is considered as uncomplicated and convenient, but also cheaper and taking less time than buying in traditional stores. We can also observe a positive trend concerning the biggest barrier of e-shopping in the opinion of respondents - perception of online shopping as safe. The online revolution has created the opportunity to sell in the online system. Consumers quickly acquire new skills in using the information contained in the Web, which is an important element of ROPO effect (Research Online, Purchase Offline). The main research objective is to identify the existence of the ROPO effect among the young generation (18-24 years of age). The survey was conducted on a group of 13736 Polish Internet users, of which 2,906 were young people (18-24 years). The obtained results confirm not only the existence of the ROPO effect among young people (18-24 years old), but also its subjective high impact on customers' purchase decisions. Respondents rated the availability of products and the price of products in the e-commerce sector as much more positive than in traditional shops. Unexpected results were obtained from the results of a question concerning customer preferences in the area of the form of purchases in the near future. A larger number of young customers indicated a traditional shop (29.78%) than online platforms (7.76%). And the lack of premises significantly affecting the existing behaviors and habits allows us to conclude that this phenomenon will not be going through rapid changes in the e-commerce sector in the nearest future.

Keywords: *ROPO effect, research online - purchase offline, young generation, e-commerce, behavior of young people*

1. INTRODUCTION

Electronic commerce is significantly different from traditional trade, especially in the area of documentation, communication with customers, payments, delivery and direct sales process. The e-commerce e-commerce platform presents the products' offer, allows accepting and placing orders, completing transactions and keeping records. Both for clients and entrepreneurs, the electronic market (marketspace) is slightly different than the traditional market (market-place) and requires the use of different tools, methods and strategies. The concept of e-commerce is very popular today, but one definition has not been formulated. E-commerce is a relatively new concept in the business vocabulary during the 1970s. The World Trade Organization (WTO) defines the concept of e-commerce as the production, distribution, marketing, sale or delivery of goods and services (WTO 1998). Diversity and a large number of existing definitions of e-commerce indicate the importance of the subject matter in the contemporary global economy and shows the interdisciplinary nature of the issue. E-commerce is not only a kind of general concept of trade, but it is also closely related to the issues of marketing and IT tools. In comparison to traditional trade, e-commerce is characterized by noticeable differences, especially in documentation, communication with clients, methods of payment, delivery and sales. In e-commerce, the presentation of the offer, placing and accepting orders, concluding transactions and preparation of documentation were transferred to the electronic platform. The shortest definition indicates that these goods or services are ordered by a traditional way (Romero & Rodríguez 2010). But one of the first definitions of e-commerce was characterised as all transactions over the Internet (Adam et al. 1999). Many of the concepts, definitions and ideas presented here are based on the work of numerous authors, including Wigand (1997), (Tsai & Chiang 2011), (Dickey Piccoli & Ives 2010) and others (Daniel Wilson & Myers 2002), (Chaffey 2015), (Falk & Hagsten 2015).

In the e-commerce sector, as in the traditional market, due to the nature of entities participating in transactions, sectors (markets) can be defined:

- B2B (Business to Business),
- B2C (Business to Consumer),
- C2B (Consumer to Business),
- C2C (Consumer to Consumer),
- B2A (Business to Administration),
- C2A (Consumer to Administration).

The main factors for using the B2B sector in e-commerce is faster communication, more effective management of business relations, shorter customer service time, globalization and computerization of transaction processes. Other benefits include: building the company's innovative image, increasing competitiveness and increasing the sales volume, as well as the possibility of acquiring new markets. The second popular B2C sector, on the other hand, is characterized by centralized one-way communication between the supplier and the individual customer. And the flow of information in this model is usually mass on the part of suppliers and individual on the part of clients. The majority of existing e-shops and offer portals operate in this sector, therefore the application part of this publication focuses on the B2C model.

E-consumer (digital consumer) is the most active among all types of consumers, who on the one hand obtains information from various sources in the purchase process, and on the other hand actively comments on and transmits information about the company and purchased products or brand. A consumer in the e-commerce sector is willing to use the opportunity to interact with the company, this action is also an important factor when making a purchase decision (Lorenzo et al. 2007). Customers' concerns, including frauds, inability to deal with complaints and concerns, and concerns about non-compliance with the offer, are the most significant barriers to the further development of e-commerce.

Among the important stimulants of e-commerce development can be indicated:

- development and dissemination of the Internet, simple and fast communication with the client;
- increase in the mobility of companies;
- increased popularity and security of e-commerce;
- development of outsourcing, that is outsourcing of some processes outside the company;
- general integration of all company activities into a unified system;
- increasing competitiveness on online markets;
- convenience of online shopping,
- lower prices of products in the e-commerce sector, compared to prices in traditional stores.

A large number of companies are already operating in the e-commerce area. According to Polish Central Statistical Office 66.9% of the companies owned their own website in 2017. Websites were used most often for the presentation of price lists, product catalogs, as well as for the recruitment of new employees. In 2016, 32.5% of Polish companies submitted orders electronically, but only less than 12% of companies served electronic orders placed by e-customers (GUS 2017). According to the institution and company analyzing the characteristics and trends in Polish e-commerce in Poland is constantly growing interest in e-shopping. In 2017, online buyers account for more than half (54%) of all internet users surveyed. Shopping behavior of the Internet users surveyed, often differ in terms of the products chosen or the frequency of their purchase, eg due to sex, age, education or economic status. Women, compared to men, are characterized by greater interest in products such as clothing, accessories, footwear, cosmetics and perfumes, children's goods, tickets and furniture. However, men are much more likely to buy in the e-commerce sector, household appliances, computer software, telephones and telephone

accessories or cars. The presented analysis confirms that the study of e-commerce requires specific customer segmentation, both due to demographic, social and economic data. This thesis is also confirmed in other studies and analyzes that segment consumers on the basis of their multi-channel behavior, they do this based on channel usage, providing different segment profiles at several stages of the purchase process (Konus Verhoef & Neslin 2016), (Nakano & Kondo 2018). Other studies suggests that psychographic and demographic customer characteristics produce different perceptions of the costs and benefits of e-commerce, which determine consumer utilities for search and purchase (Konus Verhoef & Neslin 2008).

Analyzes of the results of the nationwide survey showed that online shoppers have a very good opinion about making purchases online. Online shopping is considered as uncomplicated and convenient, but also cheaper and taking less time than buying in traditional stores. We can also observe a positive trend concerning the biggest barrier of e-shopping in the opinion of respondents - perception of online shopping as safe (Gemius 2017).

The online revolution has created the opportunity to sell in the online system (brand websites, online stores and other portals). Consumers quickly acquire new skills in using the information contained in the Web, which is an important element of analyzed the ROPO effect examined in this article (Research Online, Purchase Offline). However, the selection of young people (16-24) as respondents is determined by their high activity on the Internet. However, according to some studies, people over the age of 55 do not behave in a significantly different way than younger people (16-24 years) in the e-commerce sector (Garín-Muñoza López Pérez-Amaral Herguera & Valarezo 2018).

The ROPO effect (Research Online, Purchase Offline), is a phenomenon involving the search by customers, information about products / sellers on the Internet, but the purchase is carried out in a traditional form. This trend is one of the significant problems for enterprises in the e-commerce sector, because the lack of finalizing the transaction does not bring the expected profits. The development of the e-commerce sector has contributed to the emergence of more and more advanced applications and websites supporting the individual elements of the purchasing process. Thanks to the ability to quickly and easily search for products and the existence of many websites with information, very often potential customers use this medium as a basic source of information. The problem of the ROPO effect is global, it concerns most industries and countries (Seitz 2014).

The most important determinant affecting the scale of the ROPO effect is the desire to have direct contact between the customer and the product. This is essential when buying products from selected industries, e.g. clothing, cosmetics and footwear, the smaller impact is likely to be found for goods from the furniture, book or food industry. It is also worth pointing out that the same factor is very important with the reverse ROPO effect (reverse ROPO, r-ROPO). Reverse ROPO is characterized by the search for a product and information about it in traditional stores, while the purchase is made through online trading platforms. The key catalyst for ROPO is the lower price of products in the e-commerce sector, while the seller's and customer's physical contact with the product is valuable for r-ROPO. In the literature on the subject, you can also find the acronym ROTOPO (Research Online, Test Offline, Purchase Online), which is a more extensive model. ROTOPO takes into account the most important advantages of both shopping forms, extensive access to information on the web, the ability to see the product before purchasing and lower prices in e-commerce. Customer behavior consistent with ROTOPO can be identified in the area of expensive products, where the process of selecting a specific product is much longer than with fast moving products (FMCG) (Szymanski 2017).

The main research objective is to identify the existence of the ROPO effect among the young generation (18-24 years of age). In order to achieve this goal, a research hypothesis was also set up in the form of: over 50% of young people look for information about the product online before buying it in a traditional shop.

2. RESEARCH METHODOLOGY

The data were analyzed (raw data) obtained as part of the scientific cooperation of the Faculty of Organization and Management of the Lodz University of Technology with the Opiniac company - the author of the report "Panel research in ROPO 2016, preferences and consumer behavior in the omnichannel environment" (Opiniac, 2016). The study was conducted in June and July 2016, using a questionnaire containing closed questions, one-dimensional rank scales. The survey was conducted on a group of 13736 Polish Internet users, of which 2,906 were young people (18-24 years). The choice of the survey method was determined at a relatively low cost, which was of significant importance with such a large research sample. In addition, in the case of subjective consumer assessment, the survey method has been repeatedly used by other researchers (Zapata et al. 2016). In addition, the survey method is often used in the case of the need to separate respondents from the analyzed organizations, which are the basic subject of research in management sciences. The choice of the internet survey technique was dictated by the features of the research sample selected for analysis, which were young Internet users who recently purchased products in the e-commerce sector and in traditional stores. It is particularly important for the analysis of the impact of the ROPO effect to identify the behavior of customers of traditional stores in the area of searching for information.

Although 64.6% were women, which indicates an asymmetrical sample, the sample size allows for the percentage of individual results reported separately for women or men. Purposeful and convenient selection of sample was used, distributing a questionnaire on a popular informational website and many industry portals, thus ensuring access to various market sectors. For the population of Internet users in Poland at the level of 35% (about 12,250,000 people), a confidence level of 0.99 and an estimate of 0.011 were obtained.

3. IDENTIFICATION OF THE ROPO EFFECT AMONG YOUNG CONSUMERS

The first element identified in the study was the device used by respondents to search for product information before purchasing it. By far the largest number of young people use a desktop computer (Table 1), which indicates that smartphones are not always able to replace a classic computer. The biggest disadvantage of smartphones is too small screen, which makes it difficult to browse many products, especially from the clothing industry. Mobile devices are more commonly used by men than by women. The least popular device is the tablet, which is only 5.24% used for searching for information about products. Although Internet access seems to be less and less synonymous with the use of a desktop computer, especially for young people. Instead, the Millennials use mobile devices: smartphones and tablets. The scale of mobile Internet access is evidenced by Facebook data: today, over 70% of users worldwide use this service via their mobile devices. However, the e-commerce sector is significantly different from social media and often requires the use of a personal computer with a large monitor. A characteristic feature of young Internet users is multiscreening, i.e. using the media on several devices at the same time.

Device	Men	Women	General
Personal computer	74.61%	82.90%	79.58%
Mobile device	18.32%	13.09%	15.18%
Tablet	7.07%	4.01%	5.24%

Table 1. Devices used to search for product information on the Internet among young consumers.

Source: own work.

Another analyzed area is the evaluation of customers of selected elements of the store such as: availability of products and their prices. Customers evaluated both the online platform they used to

search for product information and the traditional shop where they bought the product. As shown in Table 2, both analysed areas were rated much higher in the case of online shops, especially in terms of product prices. Respondents scored on a scale from 1 to 5, where 1 meant the lowest rating of the selected determinant and 5 the highest. The table contains the average values of the assessments. Lower prices in the e-commerce sector are definitely one of the important determinants of the popularity of Internet commerce, which is confirmed by the results obtained. Similarly, the product availability element of e-shops is rated higher, thanks to the simple and quick possibility of using online search engines. Additionally, services aggregating offers from various shops are useful. The results show that there are no slight differences between the opinions of young women and men. Only men are much more critical in the area of product prices in traditional shops. The obtained results indicate a positive overall assessment of the e-commerce sector among young people. For the young generation, shopping in an online store is something completely natural and the operation of mobile devices is not a secret. Young people are self-confident, well-educated and disloyal towards the workplace. As the first generation to grow up with digital media, they use new technologies in every aspect of their lives.

	Device	Men	Women	General
Online shops	**Availability of products**	4.31	4.28	4.30
	Product prices	4.10	4.19	4.16
Traditional shops	**Availability of products**	3.92	4.05	3.98
	Product prices	3.62	3.83	3.74

Table 2. Assessment of selected elements of online and traditional stores.

Source: own work.

Unexpected results were obtained from the results of a question concerning customer preferences in the area of the form of purchases in the near future. A larger number of young customers indicated a traditional shop (29.78%) than online platforms (7.76%). On the other hand, 38.06% will do shopping through both channels of trade, and every fourth respondent is not yet determined to choose their form of purchase. The results also show that far more men than women are determined to shop online. Women prefer traditional shops. An interesting issue is also the product industry, which is probably an important factor in the preferences and behaviours of young consumers. The different results obtained for women and men confirm that marketing activities in the area of trade should be strictly personalized to a specific group of recipients.

Form of shopping	Men	Women	General
Only e-shops	9.24%	3.73%	7.76%
Only traditional shops	19.02%	33.33%	29.78%
Online and traditional shops	42.93%	38.53%	38.06%
Undecided	28.80%	24.40%	24.41%

Table 3. Future purchase preferences.

Source: own work.

The next questions concerned the main research objective, i.e. identification of the degree of ROPO effect among young people. Table 4 shows that as many as 77.11% of the respondents admitted that they had searched for product/price/brand information on the Internet before purchasing it. The results

confirm that this phenomenon is important for online sales, as the majority of potential customers use Internet platforms only as a source of information. The results do not allow us to conclude on the decrease in popularity of Internet commerce, but only on the phenomenon of conscious shopping. It is natural for young people to verify their options and identify the most optimal product using the Internet before buying it. For young consumers, gender is not relevant in the area of ROPO effect.

	Men	Women	General
Yes	77.78%	76.64%	77.11%
No	22.22%	23.36%	22.89%

Table 4. Searching for information on the Internet before buying in a traditional store.

Source: own work.

Another issue was to identify the strength of the impact of information found online on customers' purchasing decisions. As in Table 2, respondents assessed the magnitude of impact on a scale from 1 to 5, where 1 meant no impact and 5 meant the highest impact. The table 5 contains the average values of the assessments. The total impact of 4.1 is an indication of the strong impact of online information. The disadvantage of the study is its subjective character, which in the case of the impact force can significantly affect the value obtained. In order to confirm the results obtained, an in-depth study using data mining would have to be carried out. Data mining, is knowledge discovery from data (KDD), is the automated and convenient extraction of patterns representing knowledge implicitly stored or captured in large databases, data warehouses, internet, other massive information repositories or data streams (Han Kamber & Pei 2012, p. 23).

	Men	Women	General
Potency	4.1	4.2	4.1

Table 5. The strength of the impact of information found on the internet on the purchase of a product.

Source: own work.

4. DISCUSSION

The ROPO effect is one of the significant problems of the e-commerce sector. The obtained results show that about 77% of women and men use the Internet as a place of obtaining information about products. The most commonly used device is a personal computer, although almost 15% use smartphones. The overall high assessment of the impact of information found on the Internet on purchasing decisions confirms a systematic increase in the reliability of information found on the Internet. In addition, an analysis of the results shows that there is no significant gender dependency. In order to identify the causes of the trends and phenomena identified, additional in-depth studies would be needed. Analysis of young people's behaviour and expectations is important, as they will be the key customers in the near future. It is a group that is constantly communicating with each other via the Internet, telephone, mobile devices. There are no communication barriers for them. In addition, they have higher expectations both of the products and services they buy and of the sellers and online platforms themselves. For the younger generation, for example, it is important whether a company has a sustainable development policy or corporate social responsibility (Luukkanen & Uusitalo 2014). Nowadays, retailers and marketers have to adapt their activities to a new group of customers and change the way they communicate. They have to take into account all the possibilities offered by the Internet, building a positive history around the brand and then basing all communication on it. Also important are the elements that will involve the customers, pointing to real benefits. Each message has to be tailored precisely to a well-identified target

group. Consequently, the online marketers preferences for the new communication tools had definitely determined the need for a new approach on youth policies and for new mechanisms to be involved with the decision making processes, mechanisms that would be based on their preferred tools of online communication (Calafateanu 2015).

5. CONCLUSIONS

The obtained results confirm not only the existence of the ROPO effect among young people (18-24 years old), but also its subjective high impact on customers' purchase decisions. Although the increasing popularity of mobile devices with Internet access can be noticed, most of today's young Internet users buy via their personal computers. It can be assumed that the future will be dominated by smartphones, especially among young people. The trend of providing Internet users with applications and tools supporting shopping in the e-commerce sector is becoming more and more popular. When consumers learn to use modern mobile solutions efficiently, shopping with smartphones, QR codes or NFC communications should be standard practice. Moreover, respondents rated the availability of products and the price of products in the e-commerce sector as much more positive than in traditional shops. Taking into account the results of the study, the hypothesis set out in the introduction was verified positively, i.e. nowadays the value of the ROPO effect among young people is significant. And the lack of premises significantly affecting the existing behaviours and habits allows us to conclude that this phenomenon will not be going through rapid changes in the e-commerce sector in the nearest future.

REFERENCES

1. Adam, NR Dogramaci, O Gangopadhyay, A & Yesha, Y 1999, 'Electronic Commerce: Technical, Business, and Legal Issues', Prentice-Hall, Upper Saddle River, New York.
2. Calafateanu, AM , 2015, 'Online Communication Tools leading to Learning, Identity and Citizenship for Digital Natives', viewed 17 July 2018, <https://pjp-eu.coe.int/documents/1017981/8525351/Paper+Communication+Digital+Natives+Adina+Calafateanu.pdf/534b534f-b199-4558-8718-36060af5dd6a>
3. Chaffey, D 2015, Digital Business and E-Commerce Management, Strategy, Implementation and Practice 6th Edition, Pearson Education Limited.
4. Daniel, E., Wilson, H., & Myers, A 2002, 'Adoption of E-Commerce by SMEs in the UK: Towards a Stage Model', *International Small Business Journal*, vol. 20(3), pp. 253–270.
5. Dickey, MH Piccoli ,G & Ives, B 2010, Electronic Commerce: Markets and Users [in:] Handbook on Electronic Commerce, (ed.) Blanning Troy Strader, Whinstons, A, pp.101 -121
6. Falk, M & Hagsten, E 2015, 'E-commerce trends and impacts across Europe', *International Journal of Production Economics*, vol. 170, part A, pp. 357-369.
7. Garín-Muñoza, T López, R Pérez-Amaral, T Herguera,I & Valarezo, A 2018, 'Models for individual adoption of eCommerce, eBanking and eGovernment in Spain', Telecommunications Policy, viewed 8 July 2018, <https://www.sciencedirect.com/science/article/pii/S0308596117303993>
8. Gemius, E-commerce w Polsce 2017, viewed 7 July 2018, <https://www.gemius.pl/ecommerce>.
9. Han, J Kamber, M Pei, J 2012, 'Data Mining Concepts and Techniques', 3rd Edition, Morgan Kaufmann Publisher, Waltham, p. 23
10. Konuş, U Verhoef, PC & Neslin SA 2016, 'Segmenting multichannel consumers across search, purchase and after-sales', *Journal of Retailing and Consumer Services*, vol. 33, pp. 62-71.
11. Konus, U Verhoef, PC & Neslin, SA, 2008, 'Multichannel Shopper Segments and Their Covariates', *Journal of Retailing*, vol. 84, no. 4, pp. 398-413.

12. Lorenzo, C Constantinides, E. Geurts, P. Gómez, MA 2007, 'Impact of Web Experience on e-Consumer Responses', [in:] *Lecture Notes in Computer Science, E-Commerce and Web Technologies, Web Marketing*, Springer Berlin Heidelberg, p. 198.
13. Luukkanen, L Uusitalo, O 2014, 'Young people's perceptions of the responsibilities of organizations promoting financial capability', *International Journal of Consumer Studies*, vol. 38, pp. 192–199.
14. Nakano, S & Kondo, FN 2018, 'Customer segmentation with purchase channels and media touchpoints using single source panel data', *Journal of Retailing and Consumer Services*, vol. 41, pp. 142-152.
15. Polish Central Statistical, Społeczeństwo informacyjne w Polsce w 2017, viewed 7 July 2018, <https://stat.gov.pl/files/gfx/portalinformacyjny/pl/defaultaktualnosci/5497/2/7/1/spoleczenstwo_informacyjne_w_polsce_w_2017.pdf>.
16. Romero, CQ & Rodríguez, D 2010, 'E-commerce and efficiency at the firm level', *International Journal of Production Economics*, vol. 126, issue 2, pp. 299-305.
17. Seitz, S 2014, *An analysis of the ROPO effect in the field of agricultural insurance in Germany*, Grin Publishing, Nordestedt.
18. Szymanski, G 2017, 'ROPO effect in the food industry in women assessment', in: *Globalization and its socio-economic consequences*, Proceedings 17th International Scientific Conference, part VI, Rajecke Teplice, Slovak Republic, pp. 2634-2643.
19. Tsai , HH & Chiang, JK 2011, 'E-Commerce Literature Trend Forecasting: A Study of Bibliometric Methodology', *International Journal of Digital Content Technology and its Applications*, vol. 5, no. 1, pp. 101–111.
20. Wigan, R 1997, 'Electronic Commerce: Definition, Theory, and Context', *The Information Society*, vol. 13:1, no. 16, pp. 1-16.
21. World Trade Organization, *Electronic commerce*, viewed 7 July 2018, <https://www.wto.org/english/Tratop_e/ecom_e/ecom_e.htm>.
22. Zapata, SD Isengildina-Massa, O Carpio, CE Lamie, RD 2016, 'Does E-Commerce Help Farmers' Markets? Measuring the Impact of MarketMaker', *Journal of Food Distribution Research Society*, vol.. 47, iss. 2.