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DETERMINANTS OF ONLINE SHOPPING BEHAVIOR

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Abstract:
To many people, browsing online offers and auctions via the Internet has become as an equivalent of, or perhaps even more important than, shopping in a traditional store. The Internet has also become a natural tool for making purchases, increasing its share at the expense of shopping in a traditional (classic) manner. This paper is the continuation of the discussion (series of publications) on online purchases, based on surveys conducted on a group of over 500 respondents. Presented analysis results pertain to: perceived usefulness, perceived ease of use, attitudes and actual usage of Internet for shopping purposes. In addition to the presented analyses, selected indicators concerning adequacy of tasks and technology were added. For analysis of factors that determine browsing of offers and making purchases, authors used elements of descriptive and mathematical statistics.

Keywords: online shopping, e-commerce, technology acceptance model, task-technology fit model

1. INTRODUCTION

Making purchases over the Internet has become increasingly common. Share of online shopping has continued to grow rapidly, and more and more people have acknowledged its benefits. According to the estimates, in 2014 B2C e-commerce sales worldwide reached USD 1.44 trillion. In 2015, it is forecasted to grow by 15.6%, up to USD 1.7 trillion. Long-term analyses have shown that in 2018, e-commerce sales will amount to USD 2.35 trillion (Worldwide…, 2014).

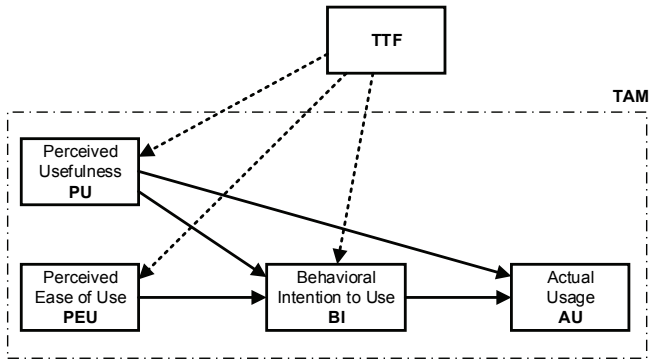
Buyers intentionally use traditional and electronic methods to access product information (Xinyu, 2012, pp. 993–1002). Online shopping differs from traditional shopping though. Significant impact is usually exerted by lower purchase price of products and services (E-commerce in Europe, 2014, 2014, p. 14. Other factors, including trust and satisfaction, are also important (Yung-Shao & Yung-Ming, 2014, pp. 996-997). In Poland, e-commerce sales has gone up as well. The number of Internet users in Poland is estimated at 21.6 million (64% of the population), 17 million (78%) visit e-commerce websites, and 12.7 million (59% of Internet users) visit online shops (Report…, 2014, pp. 2).

This paper is the continuation of a series of publications inspired by the paper (Klopping & McKinney, 2004, pp. 35-48) on the use of Internet in analysing offers and using it as a tool for making purchases. Previous papers; (Banaś, 2014)[1] were devoted to a model-based approach to e-commerce based on answers given by respondents in Poland. Models presented in those publications were built using some characteristics (variables) defined in the questionnaire. This paper attempts to systematise all variables typical for attitudes displayed during the online buying process, serving as grounds for construction of the models. The analyses refer to the entire sample. In addition, the sample (512 respondents) was divided according to sex of respondents. The group included 299 women (W) and 212 men (M). One person failed to indicate their sex.

2. MATERIALS AND METHODS

For purposes of respondent examination, the prepared questionnaire included majority of statements used in the paper (Klopping & McKinney, 2004, p. 48). What is more, this section of the questionnaire was enriched with additional elements intended to more precisely characterise attitudes in the investigated area. In statements referring to perceived usefulness PU, perceived ease of use PEU, behavioural intention to use BI (components of the Technology Acceptance Model, TAM) and variables of the Task-Technology Fit Model (TTF), the five-point Likert scale was used. In order to determine the actual usage AU, the following scales were used: in statement AU1 – the five-point scale, in statements AU2 and AU3 – the four-point scale and in statement AU4 - the six-point scale.
A diagram demonstrating relationships between TAM components and TTF model (Figure 1) presented in the paper (Klopping & McKinney, 2004, p. 38) was adopted as the basis for analysis.

Figure 1: Combined model of TAM and TTF



Source: Klopping & McKinney, 2004, p. 38.

3. USEFULNESS, EASE OF USE AND INTENTIONS TO USE

[1] *Użyteczność e-commerce w badaniach polskich użytkowników (Usefulness of e-commerce in studies on Polish users)*, Faculty of Management, University of Warsaw, 2014 – paper in review.

Based on the Technology Acceptance Model (TAM), perceived usefulness and perceived ease of use of a given system may be distinguished as basic elements affecting actual usage. Model-based approach to this issue leads to finding the magnitude of relationships between latent variables distinguished in the model. A lot of interesting information concerning user attitudes is also provided by the analysis of measured variables. Attitudes in this respect were investigated using the five-point Likert scale (from 'strongly disagree' – 1 to 'strongly agree' – 5).

Table 1: Mean values for variables pertaining to the Technology Acceptance Model

Variable	Statement in the questionnaire	Mean value W	Mean value W&M	Mean value M
PU1	Internet makes me shop much more quickly.	3.91	3.90	3.86
PU2	Using Internet makes shopping easier for me.	3.63	3.70	3.79
PU3	Internet gives me possibilities to find and use interesting offers.	4.27	4.31	4.37
PU4	Internet gives me extensive possibilities of comparing different offers.	4.44	4.47	4.53
PU5	In general, Internet is useful in shopping-related activities.	3.82	3.87	3.96
PEU1	Learning how to use Internet for shopping related-activities is hard[2].	4.09	4.06	4.07
PEU2	Learning how to use Internet for shopping-related activities took me a long time.	4.32	4.39	4.50
PEU3	I often feel lost when I use Internet for shopping-related activities.	4.20	4.26	4.37
PEU4	Using Internet for shopping-related activities is a good solution.	3.54	3.65	3.80
BI1	I believe that it would be very good to expand the use of Internet for shopping purposes due to economic benefits.	3.50	3.61	3.75
BI2	I believe that it would be very good to expand the use of Internet for shopping purposes due to functional benefits.	3.55	3.60	3.68
BI3	Using Internet for shopping-related activities is a good idea.	4.00	4.04	4.09
BI4	Internet is a safe tool for browsing offers and making purchases.	3.46	3.43	3.38
BI5	In general, I like using Internet for shopping-related activities.	3.68	3.69	3.69
AU1	I very often use Internet for shopping-related activities.	2.98	3.10	3.25

Source: Author's own study, N=512.

Table 1 presents the analysis of mean values obtained for perceived usefulness, ease of use and intention to use. The highest value shows that Internet users perceive Internet as an excellent tool for comparing offers (PU4; 4.47). In this area, slightly higher value is observed in the group of men (higher by 0.09). In comparison to traditional methods, searching for interesting products or services and online buying is supported by many tools designed to compare parameters of interesting products and purchase costs across many online shops and auctions.

In the group of characteristics typical for *perceived usefulness*, possibility of finding interesting offers is also significant (PU3; 4.31). Higher result in this respect was also obtained in the group of men (higher by 0.10). Internet users use global reach of the Internet for searching for affordable products; they are also interested in finding unique offers that are not available in traditional shops, e.g. as gifts for their family and friends.
Respondents also reported that Internet allows them to shop quickly (PU1; 3.90) and easily (PU2; 3.70). As regards the purchase delivery rate, this indicator was higher in the group of women by 0.05.

[2] The questionnaire was composed of mainly positive statements. Only four statements (PEU1, PEU2, PEU3 and TTF8) were negative. To ensure comparability, the above variables were transformed according to the algorithm (5→1, 4→2, etc.). All analyses and conclusions refer to transformed variables.

As regards attitudes of men regarding ease of making purchases, higher indicators were reported (by 0.16). Lower mean values referring to delivery rate and ease of online buying (in comparison to the above) may reflect very good mastering of skills of using Internet for browsing offers and making purchases, and consequently, paying greater attention to more sophisticated needs.

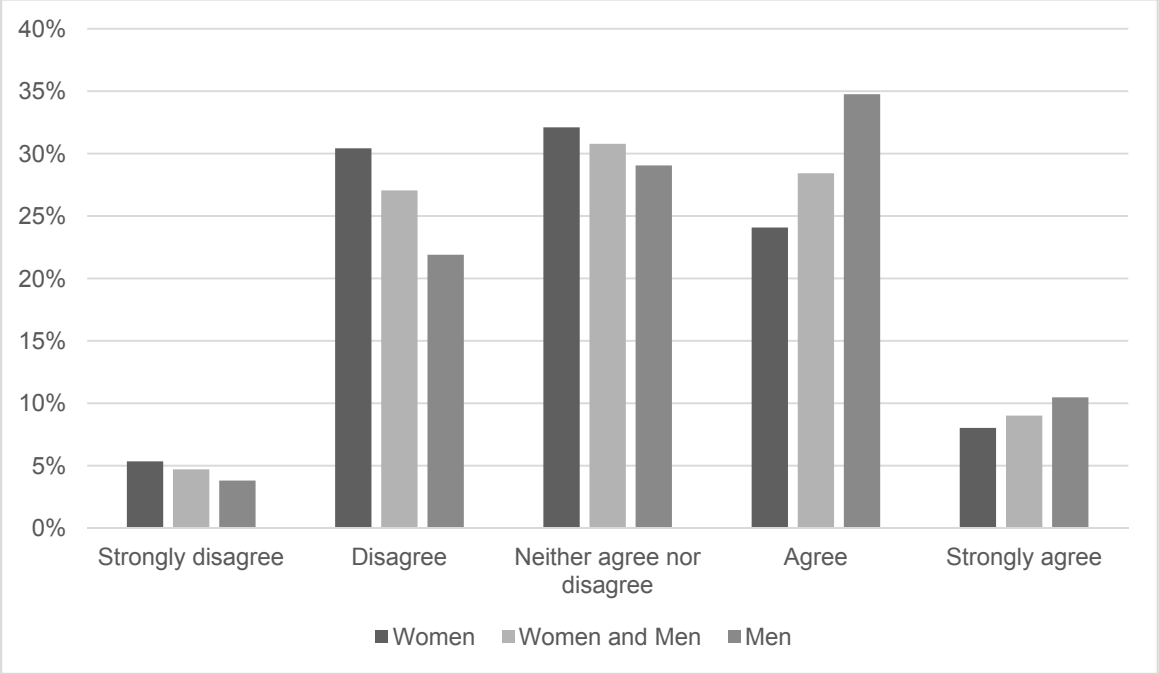
In the group of *perceived ease of use* characteristics, the highest result was obtained for the ease of learning to use Internet for shopping purposes (PEU2; 4.39). Men learn it more easily (result higher by 0.18). Also, Internet users indicate that they have no problems during shopping (PEU3; 4.26). Women tend to encounter more complications in this area (by 0.17). Internet users reported that it is easy to learn to use this tool in analysing available offers and, consequently, to make purchases (PEU1; 4.06). No differences were reported for this characteristic across the investigated subgroups.

Summing up the investigated *perceived usefulness* and *ease of use*, it may be concluded that Internet is useful (PU5; 3.87) and using it for shopping purposes is a good idea (PEU4; 3.65).

Respondents (men and women accordingly) indicated that Internet is good to be adapted for shopping purposes (BI3; 4.04). They also believe that it would be reasonable to increase the use of Internet for shopping purposes due to feasible economic (BI1; 3.61) and functional benefits (BI2; 3.60). More determined attitudes were presented by men in the area of possible economic benefits by 0.25 and functional benefits by 0.13.

The lowest result among the a/m respondents indicated that they have certain doubts concerning safety of online shopping (BI4; 3.43). Internet was indicated as a safer tool by the group of women (by 0.08). Summing up, women and men like using Internet for buying goods (BI5; 3.69).

Figure 2: Preferences of using Internet for shopping-related activities (%)



Source: Author's own study, N=510.

Detailed information is provided by a histogram (Figure 2) of AU1 variable, with special consideration of groups of men and women. Men prevail in using Internet for shopping purposes (3.25). Women's attitude is noticeably weaker (2.98). This may suggest that women are more strongly accustomed to traditional shopping methods which during purchasing of specific goods (e.g. clothes, shoes etc.) allow to, among others, touch the fabric, try the item on, compare a number of variants or receive personal advice from a shop assistant. For many customers, these are significant elements that are hard to be made up for electronically. Specification of per cent values is presented in Table 2.

Table 2: Opinions concerning preferences of using Internet for shopping-related activities (%)

AU1	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Mean value	N
Women	5.35%	30.43%	32.11%	24.08%	8.03%	2.99	299
All	4.71%	27.06%	30.78%	28.43%	9.02%	3.10	510
Men	3.81%	21.90%	29.05%	34.76%	10.48%	3.26	210

Source: Author's own study, N=510.

Actual usage of Internet for shopping purposes was defined by the number of visited shops, time spent on shopping activities and frequency of shopping visits (Table 3).

Table 3: Questions and possible answers for variables determining Actual usage

Variable	Question in the questionnaire	Possible answers
AU2	How many online shops, auction sites etc. do you visit monthly on average?	1-2, 3-5, 6-20, >20
AU3	How much time do you spend weekly on activities related to online shopping?	0-5 min., 6-15 min., 16-60 min., >60 min.
AU4	How often do you use Internet for shopping-related activities?	once a year, 2-3 times a year, 4-6 times a year, every month, a few times a month, a few times a week

Source: Klopping & McKinney, 2004, p. 38.

4. TASK-TECHNOLOGY FIT

Next, mean values for variables pertaining to the Task-Technology Fit Model were measured, both for the entire group of respondents, as well as in a division into subgroups of women and men. All details are presented in Table 4.

Table 4: Mean values for variables pertaining to the Task-Technology Fit Model

Variable	Statement in the questionnaire	Mean value W	Mean value W&M	Mean value M
TTF1	Websites provide sufficiently detailed product information.	3.38	3.46	3.57
TTF2	Website I have been visiting offer product information that is placed in a clear and easy-to-find manner.	3.76	3.75	3.73
TTF3	When I need it, I can easily and quickly find product information on a website.	3.99	4.06	4.14
TTF4	Websites I have used provide product information with details meeting my expectations.	3.76	3.77	3.82
TTF5	Product information provided on websites is sufficiently updated and meets my expectations.	3.76	3.76	3.76
TTF6	Product information provided on websites is presented in a transparent and legible form.	3.74	3.76	3.77
TTF7	Product information provided on websites is sufficient and meets my expectations.	3.62	3.63	3.64
TTF8	Product information is presented in so many forms that it is hard to use it effectively.	3.40	3.41	3.43

Source: Author's own study, N=512.

Among available statements, the highest importance was ascribed to easy and quick finding of product information on websites (TTF3; 4.06). In the group of men, this indicator is by 0.15 higher than in the group of women. For men, possibility of easy and quick finding of information about searched products is more important than for women.
Similar opinions concern:

- accuracy of information about products presented on websites (TTF4; 3.77)

- sufficiently updated product information (TTF5; 3.76);
- presenting product information in a legible and comprehensible form (TTF6; 3,76),
- placing product information in a clear and easy-to-find form (TTF; 3.75).

No significant differences were found in these areas between attitudes of men and women. All responding Internet users reported high validity, accuracy and legibility of marketing communication. These constitute significant elements while searching for information about products they wish to buy. It is important for the sellers to properly adjust website content to perception of their communications (product descriptions) by potential customers, and to present it in a clear or easy to find manner.

A prerequisite to making a proper decision to purchase a given product via the Internet is a conviction that this product will meet all (or majority) of buyer's needs. Slightly less significant than characteristics presented above is completeness of product description provided on websites (TTF7; 3.63). The descriptions constitute the basic source of information about a given product and they should be exhaustive so that buyers could make conscious choices. Also, descriptions provide grounds for all kinds of complaint proceedings connected with incompatibility of product received by a buyer with description provided on the website.

The lowest mean values were ascribed to statements referring to sufficiently detailed product information (TTF1; 3.43) and simple form of presenting this information (TTF8; 3.41). These characteristics were classified at the bottom of the list, however determined mean values slightly departed from characteristics presented above.

An interesting difference (0.19) in attitudes of men and women was related to sufficient number of details. According to women (as compared to men), websites fail to contain the expected product details. This finding could be taken into account while adjusting detailed descriptions of technical product parameters, to make them fully adjusted and satisfactory according to women.

5. CORRELATION ANALYSIS

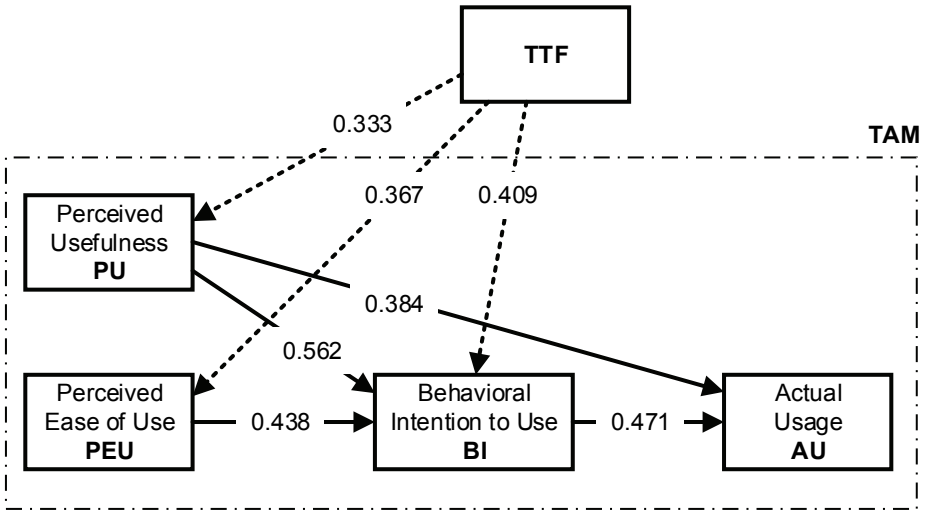
As a supplement to previous analyses, a summary of coefficients created by adding up values of variables in specific groups was prepared, according to the following formulas:
PU = PU1 + PU2 + PU3 + PU4 + PU5
PEU = PEU1 + PEU2 + PEU3 + PEU4
BI = BI1 + BI2 + BI3 + BI4 + BI5
AU = AU1 + AU2 + AU3 + AU4
TTF = TTF1 + TTF2 + TTF3 + TTF4 + TTF5 + TTF6 + TTF7 + TTF8

New variables (indicators) created in that manner were subject to Spearman's correlation of rank analysis and its results were presented in Figure 3. In all analysed areas, positive correlation coefficients were reported.

Statistically significant coefficients of correlations between perceived usefulness and actual usage of Internet for online shopping were confirmed (0.384). In addition, coefficient of correlation between perceived ease of use and actual usage was determined (0.361).

The strongest correlation between variables defining task and technology fit was obtained for behavioural intention to use Internet for browsing offers and making purchase transactions (0.409). Approximate values were obtained for relationships with variables typical for perceived ease of use (0.367) and perceived usefulness (0.333).

Figure 3: Combined TAM and TTF model with determined correlation coefficients



Source: Author's own study based on Klopping & McKinney, 2004, p. 38. Correlations are significant at the 0.01 level.

6. LIMITATIONS OF THE STUDY

The study has a number of limitations. Participants included Polish respondents only. Respondents were relatively very young. In a thus determined group of respondents, Internet may be typically perceived as a tool for browsing offers and making purchases at online auctions and shops, there may exist a specific demand for a specific group of products and respondents may have a limited amount of cash at their disposal. Therefore, results presented above should be referred to the a/m group only.

7. CONCLUSION

Conducted analyses have shown that Internet is an excellent medium for comparing multiple market offers. Learning about possibilities offered by the Internet as a shopping tool does not take a lot of time. Internet is perceived as a reliable tool for electronic shopping and Internet users claim that expanding areas of its use is justified due to economic and functional benefits.

Internet users are aware of its possibilities, especially those related to online shopping. They can easily and quickly find all necessary information. Insignificant differences in attitudes presented by the group of men and women participating in the study were observed. For this reason, the investigated group of Internet users may be deemed homogeneous.

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