CUSTOMER CAPITAL AS A KEY FACTOR
OF E-COMMERCE MARKET DEVELOPMENT

Dalibor Gottwald[1], Libor Svadlenka[2], Hana Pavlisova[3]

[1,2]Department of Transport Management, Marketing and Logistics, Jan Perner Transport Faculty, University of Pardubice, Czech Republic, E-mail: dalibor.gottwald@student.upce.cz, libor.svadlenka@upce.cz

[3] Department of English and American Studies, Faculty of Arts, Palacky University Olomouc, Czech Republic, E-mail: hana.pavlisova02@upol.cz

Abstract

The importance of customer satisfaction has always been crucial to development of every single market in general. E-commerce market has gained importance during the last few years – especially in terms of annual turnover of e-commerce market. This trend is the result of changes in customer behavior. Increasing customer loyalty is one of the keys to business success. Active customer policy is necessary for the development of the market in individual states. The central point of the issue is to find concrete social constructs which can explain customer behavior in recent years. The main objective of the research is to define the area of selected variables which can be regarded as crucial in the process of predicting development of e-commerce market. By using Theory of Planned Behavior (TPB), the dependence of development of e-commerce market on customer capital has been confirmed.

Keywords: Communication, customer capital, e-commerce, B2C market.

1. Introduction

The effort of each company and of any market is to guarantee the highest possible level of customer satisfaction [1]. The issue of consumer behavior in relation to possible prediction of the behavior of market development is dealt with by the means of intellectual capital and customer capital in particular, as it is a part of the intellectual capital [2 and 3].

E-commerce market has gained importance during the last few years, especially in terms of annual turnover of e-commerce market of individual states. This trend is important especially when taking into account the fact that the transition to this new way of doing business is associated with a wide range of activities [4, 5 and 6]. Within these activities, there exists a considerable scope for reduction of individual cost elements [7, 8, 9 and 10]. E-commerce market can be divided in terms of direction of the transaction – individual subjects stand on the side of supply or demand [11, 12 and 13]. Timeliness of this research is evident from the number of studies dealing with the analysis of e-commerce market trends on global basis. Dieke et al. from the company WIK Consult GmbH have dealt with the issues of designing and development of initiatives to promote the growth of e-commerce market via better functioning parcel delivery systems [14]. Burkl from the Gfk company adresses in his study

the current state of the consumer surroundings in selected countries of European Union (EU) [15].

The main objective of this article is associated with the above defined topics. It is to define the area of selected variables which can be regarded as crucial in the process of predicting development of e-commerce market. It means to carry out analysis of an indicators of development of turnover B2C (business to customer) e-commerce market from selected member states of the EU in relation to dependent variables which define the social constructs that may affect customer capital of e-commerce market. The general model called Theory of Planned Behavior (TPB) will be used for verification of the defined area. At present, this model is not used for research of components of intellectual capital.

2. Material and methods

TPB is often used as a theoretical basis for prediction of human (social) behavior. TPB is based on the Theory of reasoned action [16 and 17]. Both theories are based on the assumption that individual's intention to perform a specific act of behavior is the result of the determinants of that behavior. The intent is understood as the "expression of the difficulty of performing a specific act of behavior" or the "expression of the effort which individuals plan to make in order to perform this act of behavior." For the general expression of TPB, it is necessary to define the following areas:

- attitudes towards behavior: the degree of individual's favorable or unfavorable evaluation of performance of a specific act of behavior;
- subjective norms determining the intent: the social pressure perceived in regards to the performance of a specific act of behavior [18].

Over the past few years, the TPB and the Theory of reasoned action were applied in a number of research articles [19, 20, 21 and 22]. Their aim was to predict the future intentions and specific behaviors. Later on, the TPB theory was expanded by the construct of Perceived Behavioral Control, which can be understood as a general attitude of the individual or a society towards the investigated act of behavior [19 and 23]. Now the TPB theory is used as a general theoretical framework for prediction of behavior (Fig. 1).
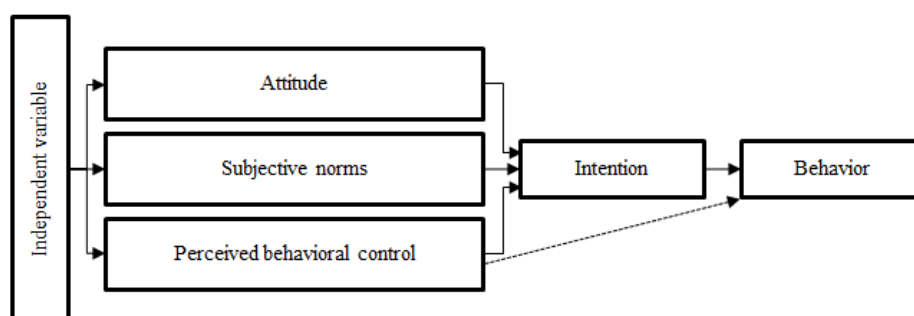

Fig. 1 General model Theory of Planned Behavior
Source: [18]

It is clear from the above mentioned model that behavior is determined by the intent, which is constituted by three components. To ensure the maximum relevance of predicted expected behavior, it is necessary to compare the current state of area under consideration with findings from the previous periods of time [24].

Nowadays, TPB is frequently used especially in social sciences, especially in research of predicting the behavior of individuals in terms of health straight behavior [25] [26].Given the fact that TPB is used to predict the behavior of individuals, it will be necessary to take over a general methodology with an overlap to allow the prediction of the behavior of e-commerce market in selected member states of the EU.

Attitude: Variables which can be considered adequate in regards to compliance with the general TPB model are "Households with internet access at home – percentage of households with at least one member aged 16 to 74" and "Last internet use: within last 12 months". Using these indicators, it is possible to gain information about society-wide attitudes towards online shopping in individual states. The Internet is an infrastructure of online shopping and the access to Internet can be seen as society's attitude towards a specific act of behavior (online shopping).

Subjective norms: "Annual Net Earnings: single person without children, 50 % of average wage" variable can be understood as a subjective norm for the possibility of online shopping (the bigger a society's earnings, the bigger the assumed total turnover of e-commerce market). Also the "Enterprises selling via Internet: all enterprises without financial sector (10 persons employed or more)" variable is relevant, this time for its relation to the number of such companies (the bigger the number of such companies, the bigger the assumed total turnover of e-commerce market). These defined variables comply with the assumptions of the general model, i.e. the possibility, and not the necessity, of performance of a specific act of behavior (online shopping).

Perceived behavioral control: The "Last online purchase in the last three months (percentage of individuals)" variable is a factor informing about the attitude of an individual towards the area under consideration and can also be understood as a factor which directly influences the resulting behavior. It is, however, essential to examine its influence in combination with factors from previous areas.

Due to the nature of the research, one independent variable was determined as a meaningful variable for determining behavior of e-commerce market, namely B2C e-commerce turnover in 2011, 2012, 2013, and 2014 (Table 1 and Fig. 2).

B2C turnover (bn EUR)   **Table 1**

	2011	2012	2013	2014
United Kingdom	84.107	96.193	110.890	127.190
France	37.700	45.000	51.100	56.800
The Netherlands	10.927	11.869	12.877	13.961
Ireland	3.040	3.800	4.600	5.300
Belgium	2.200	3.040	3.820	4.368
Germany	41.085	50.000	63.400	71.200
Austria	8.405	9.800	10.970	11.685
Poland	3.349	4.183	5.225	6.541
Czech Republic	1.505	1.800	2.160	2.874
Spain	10.916	12.969	14.414	16.900
Italy	8.078	9.565	11.268	13.278

Greece	1.800	2.560	3.200	3.850
Portugal	2.000	2.300	2.600	2.945
Sweden	6.418	7.221	8.622	9.938
Denmark	6.172	7.339	8.367	9.886
Finland	6.005	6.137	6.500	7.290

Source: [27].

Data presented in Table 1 reflect the results of research into total turnover of B2C market in years 2011, 2012, 2013, 2014, which were taken from various sources:

- National associations and International associations: Netcomm (Italy), FDIH (Denmark), KAUPPA (Finland), SDH (Sweden), Adigital (Spain), BeCommerce (Belgium), Händlerbund (Germany), FEVAD (France), Apec (Czech Republic), etc.
- Corporate sources: Deloitte, Forrester, Google, Innopay, Social Bakers, I-Research, GfK, Planet Retail, etc.
- Other sources: Digital Hub Developmnet Agency (DHDA), Eurostat, European Central Bank (ECB), National Statistic offices, World Economic Forum, etc.

EU member states which had turnover less than 1 billion EUR were excluded from the research, as well as the European states which are not members of the EU. Defined dependent variables were used to demonstrate their dependence on the independent variable in years 2011-2014. This was done to ensure the maximum relevance of the intention, which is the basis for the expected behavior prediction.
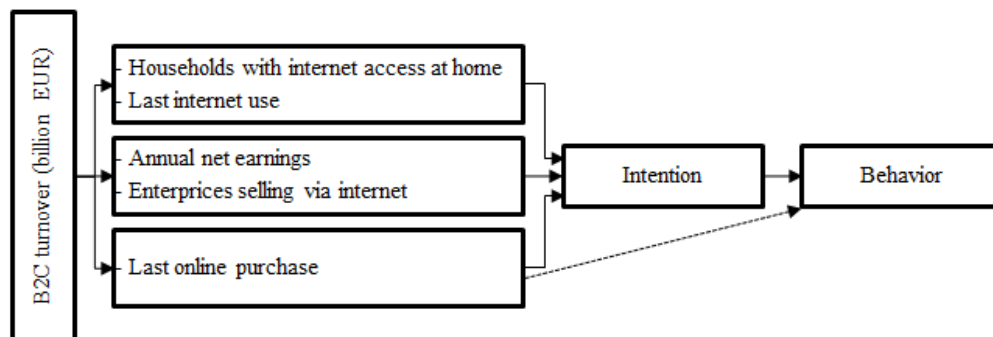

Fig. 2 Modified model Theory of Planned Behavior
Source: authors

Paerson's correlation coeficient was used to find the correlation between the independent variable determining the behavior of e-commerce of the market and the defined dependent variables, which are guaranteed by the respective indicators in the three basic categories of TPB model.

$$r = \frac{\sum (x-\bar{x})(y-\bar{y})}{\sqrt{\sum (x-\bar{x})^2 \sum (y-\bar{y})^2}} \qquad (1)$$

The final determination of significance of correlation was established on the basis of calculation of P value with significance level at 5 %.

3. Results and discussion

The indirect measurement method was used in the research of three components of TPB, i.e. the stated results reflect values taken from studies of international non-governmental organization OECD and the Directorate-General of the European Comission - Eurostat between years 2011 and 2014 (Tables 2, 3 and 4).

Measurement of Attitudes   Table 2

ATTITUDE	Households with internet access	Last internet use
Country	P value	P value
	Paerson's (r)	Pearson's (r)
United Kingdom	0.0514	0.0205
	0.9486	0.9795
France	0.0261	0.0120
	0.9739	0.9880
The Netherlands	0.0473	0.0662
	0.9527	0.9338
Ireland	0.1069	0.0103
	0.8931	0.9897
Belgium	0.0477	0.3173
	0.9523	0.6827
Germany	0.0043	0.0126
	0.9957	0.9874
Austria	0.041	0.0212
	0.9599	0.9788
Poland	0.0076	0.1695
	0.9924	0.8305
Czech Republic	0.0730	0.0096
	0.9270	0.9904
Spain	0.0017	0.0013
	0.9983	0.9987
Italy	0.0410	0.0106
	0.9590	0.9894
Greece	0.5810	0.0083
	0.9419	0.9917
Portugal	0.0142	0.0739
	0.9858	0.9261
Sweden	0.7387	0.6542
	-0.2613	-0.3458
Denmark	0.1166	0.0250
	0.8834	0.9750
Finland	0.1512	0.1253
	0.8488	0.8747

Source: authors

Measurement of Subjective norms   Table 3

SUBJECTIVE NORMS	Annual net earnings	Enterprises selling via internet
Country	P value	P value
	Paerson's (r)	Pearson's (r)
United Kingdom	0.1963	0.1158
	0.8037	0.8842
France	0.0212	0.0489
	0.9788	0.9511
The Netherlands	0.0038	0.8372
	0.9962	0.1628
Ireland	0.0445	0.2406
	0.9555	0.7594
Belgium	0.0069	0.2997
	0.9931	-0.7003
Germany	0.0229	0.1386
	0.9771	0.8614
Austria	0.0183	0.6700
	0.9817	0.9330
Poland	0.0615	0.0542
	0.9385	0.9458
Czech Republic	0.1050	0.2574
	-0.8950	0.7426
Spain	0.0237	0.0436
	0.9763	0.9564
Italy	0.0630	0.0698
	0.9370	0.9302
Greece	0.0189	0.2406
	-0.9811	0.7594
Portugal	0.1439	0.2407
	0.8561	-0.7593
Sweden	0.2165	0.6444
	0.7835	-0.3556
Denmark	0.0388	0.9448
	0.9612	0.05521
Finland	0.2131	0.1759
	0.7869	-0.8241

Source: authors

It was found in the research that in the area of "Attitude" (Table 2), the dependence of defined variables on the independent variable (B2C turnover) has been confirmed as statistically significant in both variables ("Households with Internet access" and "Last Internet use") in France, Germany, Austria, Spain, and Italy. Defined dependence has then showed to be

significant in at least one of the variables in United Kingdom, The Netherlands, Ireland, Belgium, Poland, Czech Republic, Greece, Portugal, and Denmark. Results of the statistical testing of the area of "Subjective norms" in Table 3 confirm the dependence of both variables ("Annual net earnings" and "Enterprises selling via Internet") on the independent variable in France and Spain. Defined dependence has then showed as significant in at least one of the variables in The Netherlands, Ireland, Belgium, Germany, Austria, and Denmark.

From the above tables it is clear that Sweden and Finland (both states are insular states in the north of Europe) do not confirm this dependence in either variable in both areas, which could be used as input data for further research.

Measurement of Perceived behavioral control Table 4

PERCEIVED BEHAVIORAL CONTROL	Last online purchase	
Country	P value Paerson´s (r)	Significance of correlation? (alfa = 0,05)
United Kingdom	0.0748 0.9252	NO
France	0.0436 0.9564	YES
The Netherlands	0.1102 0.8898	NO
Ireland	0.0797 0.9203	NO
Belgium	0.0431 0.9569	YES
Germany	0.0205 0.9795	YES
Austria	0.1070 0.8930	NO
Poland	0.0160 0.9840	YES
Czech Republic	0.0037 0.9963	YES
Spain	0.0134 0.9866	YES
Italy	0.0272 0.9728	YES
Greece	0.0135 0.9865	YES
Portugal	0.0087 0.9913	YES
Sweden	0.1214 0.8786	NO
Denmark	0.0478 0.9522	YES
Finland	0.0141 0.9859	YES

Source: authors

The research of statistical dependence of the behavior of e-commerce market (B2C turnover) on the variable defining Perceived behavioral control has shown dependence in France, Belgium, Germany, Poland, Czech Republic, Spain, Italy, Greece, Portugal, Denmark, and Finland.

Only one variable has been established as a dependent variable in Perceived behavioral control. It was due to insufficient data basis of other potential variables which could define this area. On the other hand, there is no requirement for minimal amount of dependent variables defining a given area in the application of TPB [18 and19].

General result of application of TPB model can be expressed via the correlation of independent variable on the behavior of e-commerce market expressed by the B2C turnover indicator. In Tables 1 and 2, states which show positive correlation in both variables defining the given area of TPB are marked in yellow, while states that show positive correlation at least in one of these variables are marked in green. Table 3 shows in yellow-green color the states that show positive correlation with the indicator defining behavior of e-commerce market.

Based on the results it can be stated that defined model TPB can be applied to the markets of France and Spain (where correlation was shown in all areas of research), and for Belgium,

Germany and Denmark (where positive correlation has shown at least in one variable of the three researched areas of TPB).

The values found in other states can be considered partial results and cannot be applied to prediction of e-commerce market behavior through TPB model. With regards to the fact that the given theory has not been used for prediction of e-commerce market of the EU states so far, these results can be seen as innovative and can be used as a basis for further research of application of this theory on the given area of research.

4. Conclusions

The main objective of this article was to highlight the key variables which can be determined as crucial for the prediction of development of e-commerce market from the point of view of the customer capital. It also establishes selected variables which can be understood as relevant in the prediction. TPB is commonly used in social sciences to predict development of a specific phenomenon and in this research was used to define the area of research. TPB was used in this context to innovate the scientific approach towards prediction of e-commerce market behavior.

It can be concluded that TPB has proved to show results in some states. The results can be used in further research, especially in establishment of other variables applicable to the general model of TPB. Another topic for further research would be a closer look at results in a more general context of the currently turbulent e-commerce market.

The results have shown that the influence of customer capital in the selected group of states is statistically significant, and thus the prediction of development of e-commerce market must take into account selected social constructs (determined by specified variables) which influence the individual customer.

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