TRUST AND SECURITY AS SIGNIFICANT FACTORS INFLUENCING ON-LINE BUYING BEHAVIOR IN THE CZECH REPUBLIC

DŮVĚRA A BEZPEČNOST JAKO VÝZNAMNÉ FAKTORY OVLIVŇUJÍCÍ NÁKUPNÍ CHOVÁNÍ NA INTERNETU V ČESKÉ REPUBLICE

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Abstract:
This paper examines factors influencing on-line customers' behaviour with an emphasis on trust and security. Based on previous studies on this topic, trust and security were chosen as having expected significance in e-shoppers' behaviour. The research was conducted in business-to-consumer markets in the Czech Republic. The results of the research confirm that online shopping is connected to fears and that distrust plays a key role in the buying decisions of e-shop customers.

Keywords:
E-commerce, Internet Buying Behaviour, Security, Trust.

Abstrakt:
Příspěvek se zabývá vybranými faktory, které ovlivňují nakupování spotřebitelů na internetu v České republice s důrazem na důvěru a bezpečnost. Důvěra, bezpečnost a další parametry významně vstupují do zákaznického chování, mají stěžejní vliv na jeho rozhodování a staly se tudíž hlavními sledovanými parametry v provedeném výzkumném šetření. Výzkum byl proveden na B2C trzích v České republice a prokázal významnou roli těchto vybraných faktorů v nákupním procesu.

Klíčová slova:
Elektronický obchod, Nákupní chování na internetu, Bezpečnost, Důvěra

JEL Classification: M31, L81

1   Introduction

The Internet has become almost a traditional site for shopping. It is a fast and comfortable shopping channel, enabling customers to save time and primarily money. According to Delone and McLean (2004), the Internet has dramatically affected the conduct of business. As the US Census Bureau stated in its regular report, "*Quarterly retail e-commerce*", released in July 2016, US Internet sales for 2015 were USD 341,828 billion higher than the 2014 sales of USD 297.59 billion. The report also noted a rapid growth in online sales in the last five years, from USD 169.84 billion in 2010. The e-commerce segment of retail sales accounted for 7.5% of total retail sales in the US. According to *Ecommerce News (2016)*, e-commerce in Europe is expected to reach EUR 509.9 billion in 2016. Online sales of goods were worth EUR 455.3 billion in 2015, so this represents growth of 12%.

E-commerce can be understood as the use of the Internet to facilitate, execute and process business transactions. Online shopping has become increasingly popular because of its advantages in terms of cost savings, fast delivery and convenience. Vinerean et al. (2014) investigated international consumers' use of the Internet and Schramm-Klein et al. (2007) analysed shopping motives among Internet users. Naseri and Elliott (2011) examined the impact of demographics, social connectedness and prior online experience on customers' online shopping. Online shopping has experienced rapid development and e-commerce has become a very popular method for purchasing goods and services. Elms et al. (2016) explained the role of the Internet in e-commerce and examined how Internet shopping affects customers' behaviour and buying practices. Internet-based shopping has affected some segments of the market to a much greater extent than others and retailers have also been hit hard by the Internet, with increasing numbers of consumers preferring to shop online rather than visit a store.

The main aim of this paper is to examine factors influencing customers' online shopping behaviour with an emphasis on trust and security. The article follows previous studies that have pursued this topic.

The paper is structured as follows. Section 2 provides a review of the literature and the theoretical background to the topic. Section 3 explains the methodology and data collection. The main results are presented and discussed in Section 4. Section 5 highlights the main conclusions of this research.

2   Literature and theoretical background

2.1   General overview of online customers in Europe

Electronic commerce has become a large and important segment in the new digital economy over the last 10 years (Hostler et al., 2012). The vast increase in e-commerce, together with the development of information technology, has had a profound impact on the world economy. E-commerce enables regional traders to be less local and more global and also reduces trade barriers (Sung, 2006).

The Internet has become one of the most popular shopping channels and has changed customers' shopping habits, largely through rapid technological development. InternetWorldStats (2016) shows that there are over 604 million Internet users in Europe and there is 73.5 % Internet penetration in general. More than 65% of Internet users in the European Union (EU) used the Internet to make a purchase online in 2015. According to Eurostat (2015) statistics, the share of e-shoppers increased from 59% EU online customers in 2012 to 65% in 2015. Among Internet users, the highest percentage of online shopping is found in the United Kingdom (UK), where 81% of those with Internet access have used it to shop, followed by Denmark (79%), Luxembourg (78%), Norway (76%) and Germany (73%).

The *Ecommerce News Europe* (2015) forecast e-commerce turnover of EUR 3.5 billion in the Czech Republic in 2015, which is 7.1% of total estimated retail sales. Almost 70% of Czech people use the Internet and more than 50% of Internet users are e-shoppers. The amount spent on online shopping by Czechs was CZK 81 billion in 2015 compared to CZK 67 billion in 2014 and CZK 58 billion in 2013. A study by Go-globe

(2016) confirmed statistical expectations and presented other facts for online shopping in the Czech Republic. The number of e-stores is estimated to have decreased from 37,200 (2014) to 36,800 (2015). At least 42% of Czech shoppers shopped online in 2015 compared to 39% in 2014. These data follow European statistics and trends.

The European Parliament (2011) characterizes customers in the digital environment as being informed with better access to information about products, services and prices. E-customers identify relevant products or services for purchase and compare available supplier's offers to make the best choice. Recommendations also play a role in the shopping process. Other main drivers of online purchases include convenience and the potential to save money by purchasing online. Thus, Internet customers expect higher standards in terms of service, convenience, fast delivery, good price and the credibility of the chosen e-shop in terms of safety in purchasing. As the Santander Trade Portal (2016) states, the Czech customer is traditionally price sensitive, but the importance of quality is becoming increasingly important. This is indicated by a notable transition from cheaper products towards more recognizable brand names.

2.2   E-commerce and trust

People trust well-known and well-respected brands. Trust is increasingly important as online customers live in a dangerous environment of privacy invasion and identity theft. Birzhandi et al. (2014) state that web services and e-businesses can be successful only if virtual environments gain the trust of the public. If mobile subscription fraud is actually easier and more profitable than drug smuggling, it will attract more criminal behaviour online. Personal data can be compiled from public profiles that customers post about themselves on social networking sites (Chaffey and Smith, 2013). Trust plays an important role in many social and economic interactions involving uncertainty and dependence. As uncertainties exist in transactions over the Internet, many researchers have stated that trust is a critical factor influencing the successful proliferation of e-commerce (Gefen, 2000; Teo and Liu, 2007). Trust is crucial for any long-term business relationship. It is critical wherever risk, uncertainty and/or interdependence exist as it mitigates risk (OECD, 2012).

Trust is a significant construct for business relationships and transactions (Moormanet et al., 1993; Warrington et al., 2000) and its role in online shopping contexts is more critical than in brick-and-mortar stores (Reichheld and Schefter, 2000). This is mainly due to the unique characteristics of the online shopping environment, which results in greater uncertainty and heightened risk in online buying decisions. It is evident that trust is successful in reducing uncertainty and risk (Pavlou, 2003; Suh and Han, 2003) and creating a sense of safety (Bilgihan, 2016).

Padua (2012) points out that designing a trust strategy is a highly complex matter: trust is multidimensional construct and an approach to trust strategy requires the establishment of a one-to-one, personalized relationship between the brand and the customers to allow the effective fulfilment of the customers' needs. Customers are increasingly distrustful, particularly of certain kinds of organization and companies cannot influence some aspects of building trust, which are deeply embedded in the identity of the subject. Trust is a multidimensional construct that is often related to characteristics such as integrity and competence (Gefen, 2000). In addition, Luhmann (1979) emphasized that trust is one of the foundations for all social life. Previous studies have suggested that trust has a significant impact on the establishment of loyalty in both offline and online settings. It has been found that trust, not price, is considered the most important factor for customers in deciding to consolidate their purchases with one online retailer; to gain the loyalty of customers, you must first gain their trust (Kim et al., 2009). Yazdanifard (2011) states that trust can be considered to have a positive influence on customers´ perceptions and leads to consumer engagement in Internet shopping.

Ekonomika Economics
Management Management
Inovace Innovation

EMI, Vol. 8, Issue 2, 2016
ISSN: 1804-1299 (Print), 1805-353X (Online)
www.emijournal.cz

Padua (2012) set out the following key elements of trust:

- The trustor believes that the trustee will behave in the future in a manner that will allow him/her, the trustor, to attain his/her goal. (The trustor has a positive expectation based on information which could also stem from positive past experiences.)
- The trustor accepts that the trustee may not respond to expectations. (The trustor is vulnerable and takes this risk under a condition of *uncertainty*. This is an irrational component.)
- The trustor cannot control the trustee's behaviour. (The trustor has no power. Trust is beyond any relationship of power and control.)
- *Distrust* may occur if there is no reciprocity (trust is misplaced as the trustee does not meet the trustor's belief), or there is too much trust (the trustor exceeds any reasonable vulnerability).
- *Trustworthiness* is the outcome of the freely willed intention of the trustee to support the trustor in the future.

2.3   E-commerce and security

The conveniences of online shopping are accompanied by security threats, such as identity theft and fraud (Tsiakis, 2012). Kim (2012) argues that internet shopping is characterized by risk and uncertainty for customers. Therefore, theories that explain human behaviour under conditions of risk and uncertainty can shed light on customer behaviour in the context of Internet shopping.

Security is one of the most important online shopping specificities. Because e-shops are processing increasing amounts of information and data about their customers, the question of security seems to be more important than previously (Pinto et al., 2009). In online shopping, such trade-offs tend to occur between security and convenience, as can be witnessed in password access systems (Lee et al., 2012). The dilemma caused by the security–convenience trade-off in online shopping can be even more acute when it comes to customer authentication. To minimize losses for customers and for themselves, many online retailers employ measures for authenticating customer identity. These measures are designed to verify that the person making the purchase is the authorized user of the payment method (Cline, 2004). A lack of perceived security is a major reason why many potential consumers do not shop online; there are common perceptions of risks involved in transmitting sensitive information, such as credit card numbers, across the Internet (Chang and Chen, 2009). In view of the growing number of online purchases, Tsiakis (2012) states that consumers should have an understanding of online security and privacy risks. The risks are clearly present in less-developed countries and on less secure servers in which the misuse of credit cards still poses a threat. Nevertheless, Czech online retailers with a long-term tradition and high turnover represent no security risk for credit card payments (Lazarevič, 2013).

Since the early days of ecommerce, information security measures for online consumers have attracted significant research attention (Dhillon and Backhouse, 2001; Liu et al., 2005; Milne and Culnan, 2004; Von Solms, 2001). The area of Internet information security is well developed and evolves continuously in response to new threats (Vladlena et al., 2015).

Pavlić et al. (2012), as a result of their research, came to the conclusion that users of new media services often tend to worry about data manipulation, unauthorized data access and the unwanted tracking of certain services by third parties. However, most consumers are particularly worried about maintaining their privacy. Shah et al. (2014) came to the conclusion that customers' perceptions of overall security differ depending on their perceptions of specific confidentiality related factors, such as third party seals or security/privacy statements.

3   Research aim, methodology and data used

The aim of this article is to examine the online shopping behaviour of Czech customers and identify the main factors in terms of customers' fears that influence trust and security in using e-shopping. The research was conducted through an online questionnaire in 2015. We carried out the survey among a sample of 925 respondents. Participants in the sample were asked to respond to 41 questions.

Based on the theoretical framework outlined in previous chapters and the hypothetical model illustrated, the following research hypotheses were formed:

H1: Online shopping behaviour is related to the age of e-customers.
H2: Distrust is the greatest barrier to Czech customers using e-shops.
H3: Czech customers are afraid of privacy loss incurred by online shopping.

For the survey, a pseudo-random selection of respondents was used. In all, 925 respondents participated, yielding 706 complete questionnaires for evaluation. As can be seen in Table 1, the sample included 283 men (40.1%) and 423 women (59.9%), which is almost in line with the proportion of the sexes in the Czech Republic.

Table 1 – Sample demographics (own elaboration)

		N	%
Gender	Male	283	40.1
	Female	423	59.9
Age	16–24	195	27.6
	25–34	243	34.4
	35–44	128	18.1
	45–54	77	10.9
	55–64	38	5.4
	65+	25	3.5
Educational level	Primary education	25	3.5
	Secondary school without graduation	56	7.9
	Secondary school with graduation	232	32.9
	University degree	393	55.7
Level of Internet literacy	Beginner	64	9.1
	Common user	452	64.0
	Advanced user	165	23.4
	Professional	25	3.5

Pearson's correlation coefficient was used to measure the correlation between variables. The p-value considered significant was the 0.01% level. If the p-value is lower than the significance level, we reject the null hypothesis that there is no association between variables. The Statistical Package for the Social Sciences (SPSS) was used for the calculations.

4 Results and discussion

4.1 Internet buying behaviour in the Czech Republic

The tradition of Internet shopping in the Czech Republic is not as great as in Western Europe and the US. It is primarily the domain of the younger generation and the older generation especially still struggles with the basic use of the Internet.

Figure 1 presents the results for Internet buying behaviour. According to our research, 32.7% of Czech respondents regularly use the Internet for shopping, 54.8% of participants shop for products or services on-line on an irregular basis and 12.5% do not purchase on the Internet, but rather use traditional brick-and-mortar shops.

Figure 1: Internet buying in the Czech Republic (own elaboration)
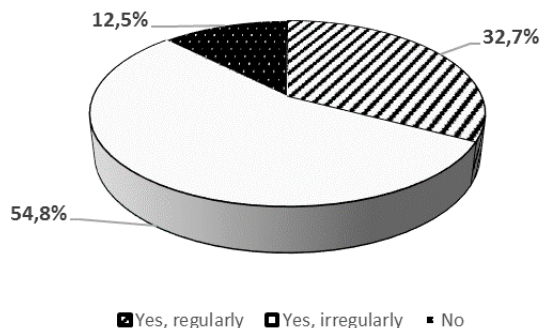
The most important factor influencing e-shopping in the Czech Republic is the price. For online buyers, the price is very important, followed by convenience and the comparison of the chosen product or service, as graphically displayed in Figure 2. Due to the Czech Civil Code, customers can return products within two weeks following purchase without any reason, but this is not a significant factor influencing the participants in this study. The study of PricewaterhouseCoopers (2016) surveyed more than 25 countries around the world to analyse changing of customers' online shopping behaviour. The report showed differences in particular countries worldwide. As we compare online buying in the Czech Republic and the countries of European Union, for e-shoppers in other countries of EU is convenience the main influencer for buying online, e.g. in Germany (56%) compared to just 35 % for price. The price is not the most important factor for online shopping in Poland (43 % of respondents) and the United Kingdom (37 %). In Denmark, 50 % respondents prioritize the price compared to convenience (38 %). French online customers consider price as important as the convenience (47 % of French respondents) for using online shops.

Figure 2: Customers' main reasons for using on-line shops (own elaboration)
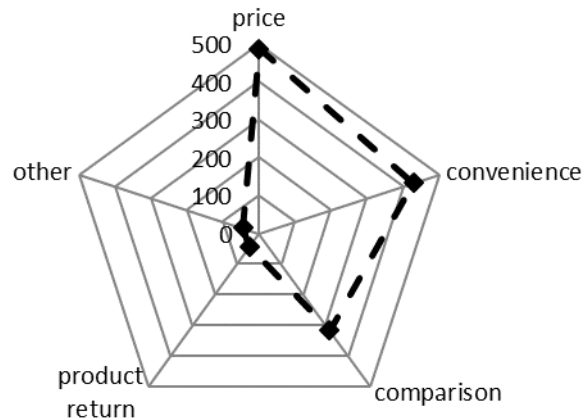
In addition, the research focused on the main criteria in e-shop selection. As presented in Figure 3, Czech customers make decisions concerning which e-shop they choose based primarily on reviews. The clarity and menu navigation, terms of delivery, graphic design and additional services provided by e-shops are also important to e-shoppers. The online customers prefer good prices (60 %), items in stock and a brand (32 %) and unique product or service (25%) that cannot be found anywhere else. Opposed to Czech shoppers, the report of PricewaterhouseCoopers (2016) shown that returns policy, fast delivery and website that are easy to use, do not belong to the most important criteria for e-shop selection for the EU and US online buyers.

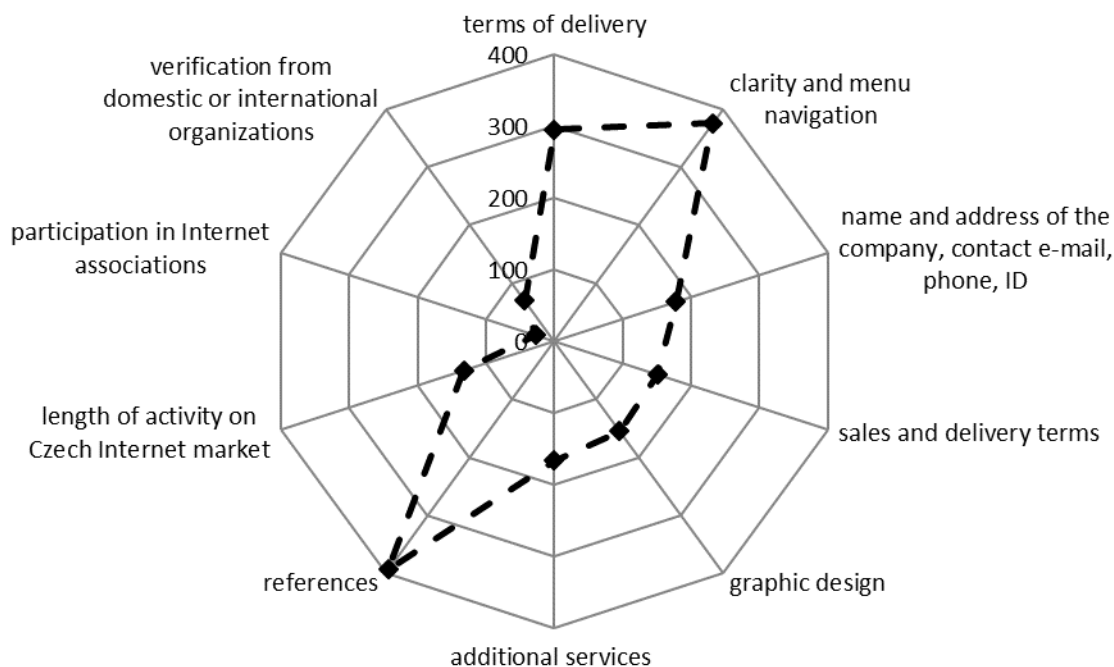**Figure 3: E-shop selection criteria in absolute numbers (own elaboration)**

Figure 4 displays the preferences of respondents based on geography. When Czech customers shop online, 74.6% prefer Czech (or Slovak) e-shops. Typical factors influencing their choice are e-shops having websites in Czech, lower delivery costs, faster delivery of products or services and higher levels of customer trust in Czech e-shops. More than 20% of customers prefer Czech, Slovak, or foreign e-shops. Only 3.2% respondents prefer shopping abroad. The main factor influencing this decision is the lower price of merchandise and its higher quality. Out-of-country shopping is popular in the EU and other surveyed countries (PricewaterhouseCoopers, 2016). Almost 65 % of global customers plan to purchase from out-of-country retailer for better prices, 51% of them plan to buy clothing and footwear, 44 % named electronics and computer and 40 % of a sample want to shop books. The customers prefer foreign e-shops for better prices, brand affinity and online customer reviews. They do not have a problem with trust and security of foreign Internet shopping; especially a group of younger e-shoppers (ages 18-34).

Figure 4: E-shop preferences (own elaboration)
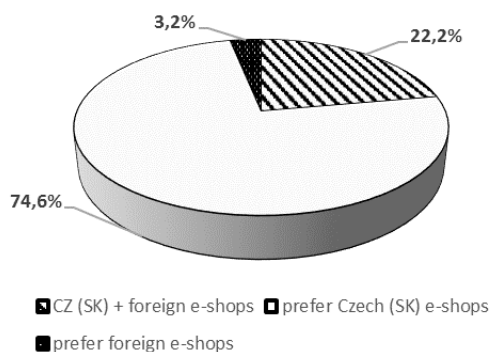
4.2 **Basic demographic characteristics and their influence on on-line buying**

Table 2 provides the statistical calculations for the variables. The Pearson's correlation coefficient shows the relationship between the demographic characteristics of the sample and the influence on online shopping. The correlation in the sample is significant at $p<0.01$.

According to the results of our research, the correlation between online buying and the age of customers ($r=0.383$) is significant. We thus reject the null hypothesis that there is no association between the variables and Hypothesis 1 is confirmed: online shopping is dependent on the age of the customer. In contrast there is no such relationship with the educational level of e-shoppers.

Table 2: Basic demographic characteristics and their influence on on-line buying (own elaboration)

		Online Buying	Sex	Level of Internet Literacy	Age	Education
Online Buying	Pearson Correlation	1	-0.129**	-0.407**	0.383**	-0.259**
	Sig. (2-tailed)		0.001	0.000	0.000	0.000
	N	706	706	706	706	706
Sex	Pearson Correlation	-0.129**	1	0.252**	0.064	-0.037
	Sig. (2-tailed)	0.001		0.000	0.090	0.325
	N	706	706	706	706	706
Level of Internet Literacy	Pearson Correlation	-0.407**	0.252**	1	-0.354**	0.298**
	Sig. (2-tailed)	0.000	0.000		0.000	0.000
	N	706	706	706	706	706
Age	Pearson Correlation	0.383**	0.064	-0.354**	1	-0.216**
	Sig. (2-tailed)	0.000	0.090	0.000		0.000
	N	706	706	706	706	706
Education	Pearson Correlation	-0.259**	-0.037	0.298**	-0.216**	1
	Sig. (2-tailed)	0.000	0.325	0.000	0.000	
	N	706	706	706	706	706

** Correlation is significant at the 0.01 level (2-tailed)

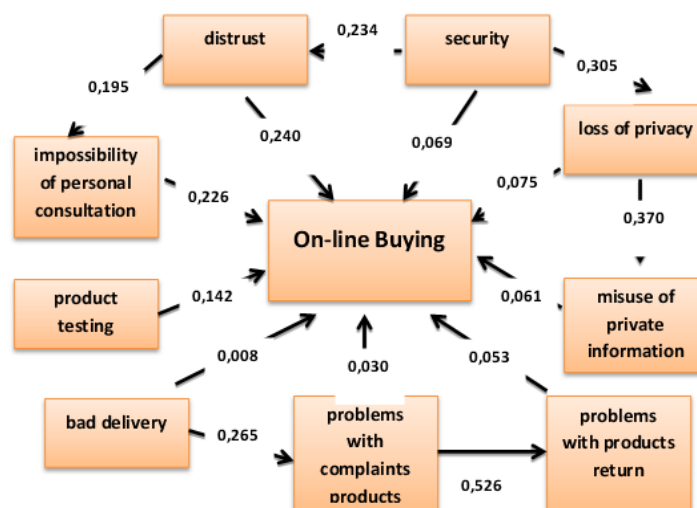### 4.3   Trust and Security as factors influencing Internet shopping in the Czech Republic

Online shopping is linked to trust and security, aspects also examined in this study. The main results are presented in Figure 5. Most customers reported being concerned about complaints procedures and product testing (61%). Only 37% of respondents marked security as an important barrier to Internet shopping. In addition, a surprising finding is that only 43% of participants marked misuse of personal data as a relevant worry because the fear of security and loss of personal information is generally very high in society.

Figure 5: Trust and security concerning Internet shopping in the Czech Republic in total numbers (own elaboration)
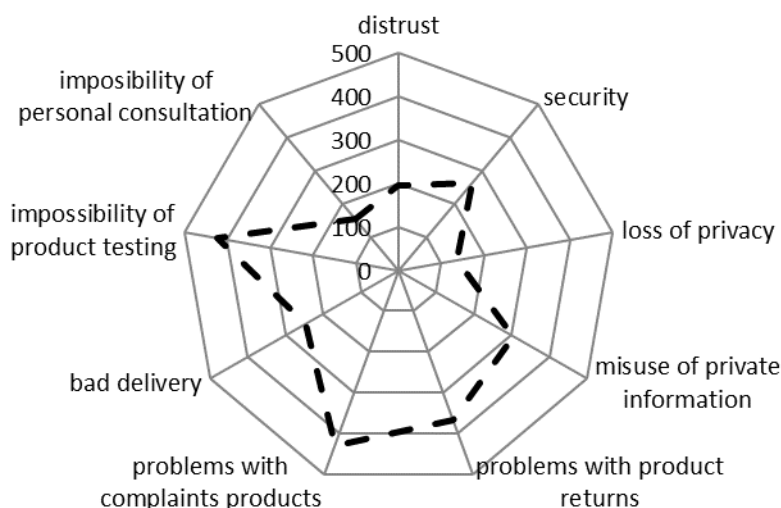
The relationships between on-line buying and factors of trust and security which illustrate customers´ and non-customers´ problems with on-line buying adoption are illustrated in Figure 6. The strongest correlation exists between distrust and on-line buying (r=0.240), this being significant at p<0.01. Hypothesis 2 is confirmed. Distrust is the most important factor influencing customers' behaviour. Despite the dependence between distrust and online shopping, the factor of security is not as important for customers as expected (r=0.069) and thus Hypothesis 3 is rejected. Customers who are afraid of security are also afraid of privacy loss (r=0.305) and the misuse of private information (r=0.370). According to Eurostat (2016) more than 70% of European customers have no problem when purchasing online. These respondents also consider payment security or privacy concerns as reasons for not buying over the Internet (27 %) and our research followed similar conclusions. 75% of respondents prefer to shop in person and like to see a product and more than 19% e-buyers concerns about goods receiving. We state the Czech customers perceive the factors influencing online shopping, especially trust and security, as important as European e-buyers.

Ekonomika Economics
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EMI, Vol. 8, Issue 2, 2016
ISSN: 1804-1299 (Print), 1805-353X (Online)
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Figure 6: Correlations of trust and security of Internet shopping in the Czech Republic (own elaboration)

5   Conclusions

The aim of this article was to examine the online shopping behaviour of Czech customers and identify customers' main fear factors influencing trust and security concern the use of e-shops. The results of the research confirmed that distrust and fear of privacy loss play a role during the buying process. We observe a dependency between online shopping and distrust and an influence of security on customers' fear of privacy loss. People who feel security is an issue in on-line shopping do not trust this medium. Czech customers also consider the impossibility of personal consultation and lack of trust to be among the greatest problems.

We can conclude that Czech people use the Internet as a medium for purchasing products or services, but they are still somewhat sceptical, with only 54.8% using the Internet regularly for online shopping. Moreover, more than 12% of customers never use the Internet as a shopping channel. The results of our survey confirmed the facts obtained by further studies and reports (e.g. PricewaterhouseCoopers, 2016 and Eurostat, 2016) followed factors influencing online shopping. The Czech customers in a sample understand trust and security as factors influencing behaviour of e-shopper over the Internet.

The limitation of our research is in a sample of respondents. Participants of our survey can be assigned in a category of millennials (ages 16-34, 62 % of participants of the research) and questionnaire was placed online over the Internet. It can be expected various answers to study questions in the other age categories and forms of survey.

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