DETERMINANTS AND BEHAVIOURAL CONSEQUENCES OF ONLINE PRIVACY CONCERNS AMONG YOUNG CONSUMERS IN CROATIA

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Online privacy concerns have been recognised as an important driver of the growth of digital economy. Although new information and communication technologies are changing business practices significantly and offer new business opportunities, they also raise online privacy concerns. Major issue is to determine how to decrease online privacy concerns and increase consumer confidence in interacting with companies in the online environment. This research seeks to identify influential factors that affect online privacy concerns and their consequences for consumer behaviour. The data collected from student sample were analysed by using exploratory and confirmatory factor analyses, and structural equation modelling. Results indicate that third-party seal assurance, previous online experience, time spent online and gender significantly affect privacy concerns, while consumer attitudes towards relationship marketing and income were not shown to have significant impact. When designing privacy policy, marketers should take into consideration those factors to alleviate privacy concerns, which will

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in turn increase purchases over the Internet. Managerial implications are discussed in the paper.

Keywords: online privacy concerns, consumer buying behaviour, digital marketing, consumer protection

1. Introduction[1]

Strategic EU documents stress the need to better exploit the potential of information and communication technologies (ICTs) in order to foster innovation and economic growth (European Commission, 2013). The Digital Agenda of European Union is one of the seven pillars of the Europe 2020 Strategy which sets objectives for the growth of the EU by 2020, while trust, privacy and security on the Internet are seen as vital drivers of the growth of digital economy. Previous research indicates that Internet has become an important marketing tool, while ICTs change business practices significantly and offer new business opportunities (Reed, 2014). However, the intensity and the volume of direct marketing communications, the gathering, manipulation, the sale of consumer personal information, and various illegal activities on the Internet have increased consumer online privacy concerns, which is a major issue hampering the growth of e-commerce (Malhotra, Kim and Agarwal, 2004; Nam et al., 2006). In the EU, 74% of citizens see disclosing personal information as a part of modern life, while 70% of respondents were concerned that their personal data held by companies may be misused (European Commission, 2011). Consumers have become reluctant to disclose their personal information and conduct online purchases (Thomas and Maurer, 1997; Bansal, Zahedi and Gefen, 2016). Therefore, reducing privacy concerns and increasing consumer confidence in using Internet is the key to success of e-commerce (Nam et al., 2006).

Our study explores the impacts of several key antecedents and behavioural consequences of consumer online privacy concerns (OPC). The paper is focused on the following research questions: (1) Which factors are major drivers of OPC?, (2) How is OPC related to consumers' purchases over the Internet?, (3) How is OPC related to consumers' protective behaviour? Antecedent variables include consumers' attitudes towards relationship marketing (ATRM), third-party seal assurance (TPSA), previous privacy experience (PE), time spent on the Internet

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(TIME), gender and income. The data collected from student sample were analysed by using exploratory and confirmatory factor analyses, and structural equation modelling.

This study contributes to existing literature related to online privacy concerns in several ways. It compares the relative impacts of six variables and seeks to identify major drivers of privacy concerns. The study integrates two perspectives into one framework, linking influential factors to online privacy concerns, and addressing the implications on online user behaviour. In this paper, privacy is explored from a general consumer privacy perspective, while the analysis includes students/Internet users in Croatia.

Furthermore, this study was conducted in Croatia, in a country that somewhat lags behind the EU in the Internet usage. In Croatia 56% individuals use Internet every day or almost every day (as compared to 65% in the EU-28), while 28% never used Internet (as compared to 18% in EU-28) (Seybert and Reinecke, 2014). Previous studies have been largely conducted in developed countries, and there is a need for similar studies to be done in other regions as well (Lwin, Wirtz and Williams, 2007; Yao and Zhang, 2008). There are just a few studies conducted in Croatia and they were done from general privacy perspective, while our study examines consumer online privacy concerns (Budak, Rajh and Anić, 2015).

This research examines online privacy concerns of university students. Based on the current Internet users' demographic segments, university students should be qualified as a representative sample for the exploratory research (Krohn, Luo and Hsu, 2002). They were raised with the Internet and might be considered as *digital natives* (European Commission, 2011), and represent a major segment for online shopping. In Croatia 96% of population between 25-36 years and 98% of population between 16-24 years use Internet, while 100% of pupils and students use computers (Croatian Bureau of Statistics, 2015).

The results of this study might help companies clarify the drivers of OPC and its consequences on consumer behaviour, and develop more affective approach in order to increase the likelihood of consumers to take more proactive approach to purchases over the Internet and direct marketing initiatives.

The paper is structured as follows. Literature review and hypotheses are presented in the next section two, followed by methodology in the third section. Results are presented in the fourth section, followed by conclusion in the fifth section.

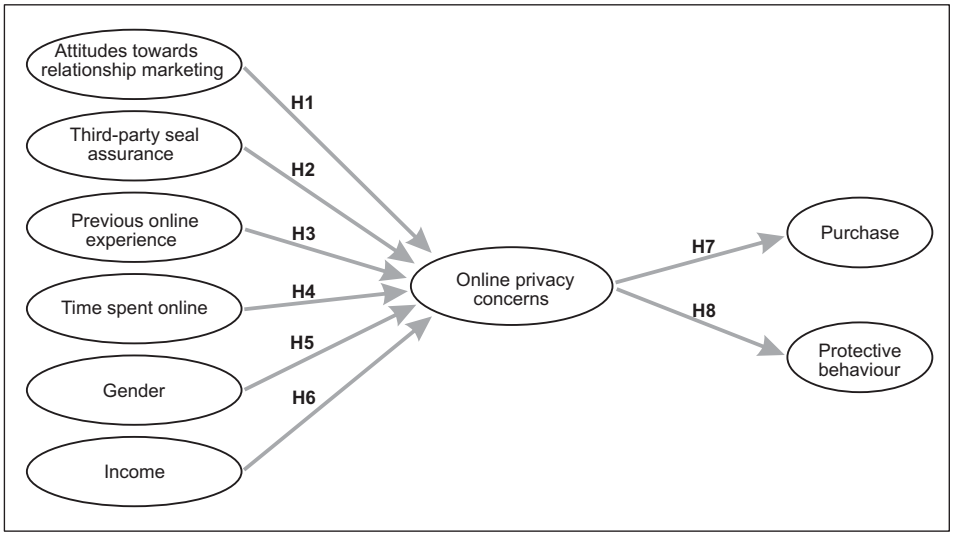
2. Literature review and hypotheses development

2.1. The concept of online privacy concerns

Conceptual model used in this research is presented in Figure 1.

Figure 1:

CONCEPTUAL MODEL



Source: Model developed by authors.

The model examines the link between six antecedent variables (attitudes towards relationship marketing, third-party seal assurance, previous online experience, time spent online, gender and income) and OPC, and the link between OPC and two variables that represent consumers' behavioural consequences (purchases over the Internet and protective behaviour).

OPC is defined as concerns about what data is being collected by online vendor and how it will be used, while the invasion of privacy on the Internet is the unauthorised collection, disclosure, or other use of personal information (Wang, Lee, and Wang, 1998). When individuals perceive that information will not be used fairly and that there will be negative consequences, they will be less likely

to engage in online activities that require information disclosure. Individuals with high privacy concerns will seek to minimise their vulnerability by limiting Internet activity (Dinev and Hart, 2004).

Various measures of OPC have been provided in previous research. Malhotra, Kim and Agarwal (2004) developed the measure for information privacy concerns for online consumers, which includes the control over personal information, awareness of privacy practices and data collection, while Dinev and Hart (2004) used two dimensions for Internet privacy concerns: abuse of personal information and information finding. Several studies used broader concept of information privacy concerns (Korgaonkar and Wolin, 1999; Krohn, Luo, and Hsu, 2002), which includes Internet users' privacy concerns about their financial transactions on the web, distribution of personal financial data, web intrusion, the control over unwanted messages and widespread availability of personal information on the Web. In this paper we use this broader concept of OPC.

Past research has examined and identified various antecedents and consequences of OPC, including Internet literacy, social awareness, Internet privacy risk, web vendor privacy-related intervention, several demographic variables, personality traits, company privacy policy, culture values, perceived convenience, reputation of a website, prior negative experience, website informativeness, trust, perceived control, Internet use, third party seal assurance (Li, 2011). As for the consequences, the following variables were identified as being important: trust, intention to return to the company's website, attitude toward the website, unwillingness to shop online, willingness to provide information to transact, intention to purchase online and actual purchases, protective behaviour (Li, 2011).

Despite the fact that various antecedents and consequences of Internet privacy concerns have been identified, the results are not consistent, and much uncertainty still exists, especially in underdeveloped, post-transition and catching-up economies. In this study we fill the gap in the literature by examining a few important variables on OPC and its consequences on consumer behaviour in the same model. While previous studies analysed the impact of privacy concerns on protective online behaviour and purchasing outcomes separately, this study provides the analysis of both outcome variables in the same model.

2.2. Hypotheses development

Past research has examined the impact of consumer attitudes towards the website and the company reputation on OPC, and the link between consumer attitudes towards relationship marketing (ATRM) and consumer concerns for in-

formation privacy (CFIP) (Milne and Boza, 1999). There are inconsistent results regarding the link between ATRM and CFIP. Some studies show that ATRM is not significantly related to consumer concerns for information privacy (Milne and Boza, 1999), while other studies suggest that ATRM is significantly and negatively related to CFIP (Phelps, D'Souza, and Nowak, 2001). However, there is no information about the link between ATRM and OPC. Although to some extent overlapping, OPC and consumer CFIP are different constructs. Nevertheless, it may be possible that there is a negative link between ATRM and OPC, meaning that positive consumer perceptions might decrease OPC. Hence, the following hypothesis is proposed:

H_1: ATRM are negatively related to OPC.

Third-party seal assurance (TPSA) has evolved as a major self-regulatory practice, which includes a seal granted by an entity to website or businesses for display (e.g. TRUSTe and BBB9). The certificates are typically conferred on the websites by the government, institutions or mass media. The conferred websites display the certificate so that visitors recognize that their privacy protection is secured. Such third parties offer to verify, monitor, and review data collection and usage practices, handle consumer dispute resolution, and offer privacy compliance seals and enforcement mechanisms (Lwin, Wirtz and Williams, 2007). The link between TPSA and OPC is not clear. Several studies show that seal programs might reduce OPC (Miyazaki and Krishnamurthy, 2002; Nam et al., 2006). However, Kimery and McCord (2002) found that third-party assurance seals had no influence on consumers' trust of a specific e-retailer, with the exception of the use of one particular seal. However, if we take into consideration that TPSA might increase users' trust, confidence and encourage them to disclose their information and engage in e-commerce when perceived risk is high (O'Neil, 2001), the following hypothesis is proposed:

H_2: The presence of TPSA is negatively related to OPC.

Previous studies show that privacy concerns might vary based on individual personal experiences with marketers. Users' experience with information disclosure can be either positive or negative. If a company does not meet consumer expectations, negative feelings and experience appear. Previously studies show that the more consumers have had negative previous experiences, the more concerned are they about their privacy, and reluctant to provide personal information (Okazaki, Li and Hirose, 2009; Yang, 2012). A single event that induces a nega-

tive experience can increase privacy concerns, even if users have mostly positive experiences (Okazaki, Li and Hirose, 2009). Users' negative previous experience may weaken consumers' trust and increase their perceived risk of responding to advertising, and might increase individual's tendency to protect their behaviour on the Internet (Cho and Cheon, 2004; Yang, 2012). Based on past research, the following hypothesis is proposed:

H_3: Prior negative online experience increases OPC.

The impact of time consumers spend online on OPC is complex. Knowledge accumulated through time spent on Internet can affect OPC both negatively and positively. Some studies suggest that frequent use of Internet increases OPC, as frequent users are more exposed to privacy threats (Yao and Zhang, 2008; Okazaki, Li, and Hirose, 2009). However, as the knowledge of privacy issues accumulates, an individual may become more concerned about online privacy. With further accumulation of such knowledge, individuals may learn how to avoid privacy risks and become less concerned (Li, 2011). Hence, the following hypothesis is proposed:

H_4: The more time consumers spend online the less OPC will be.

There is no consensus regarding the impact of gender differences on OPC (Milne and Boza, 1999; Zhang, Chen and Lee, 2013). Although there are a few studies suggesting that women and men might be equally concerned about privacy in on-line transactions (Zhang, Chen and Lee, 2013), other studies show that women tend to be more concerned about their privacy and the protection of their personal information on the Internet than men (Sheehan, 1999; O'Neil, 2001; Graeff and Harmon, 2002; Hoy and Milne, 2010; Mathiyalakan et al., 2014). This can be explained by the fact that women as compared to men are more often the victims of online abuse, and thus they might engage more in privacy protection behaviour (Hoy and Milne, 2010). Women are more likely to provide incomplete information when registering for a Web site and notify their Internet service provider about unsolicited e-mail (Hoy and Milne, 2010). They are also more likely to be concerned about secondary usage of information and about sharing personal information. Women find it important that companies inform them how their information is used (Graeff and Harmon, 2002). On the other hand, men are less concerned about how companies control and use their personal information. They are more willing to take risks and feel more comfortable making purchases on the Internet, although they might change their online behaviour in face of privacy con-

cern (Sheehan, 1999; Graeff and Harmon 2002; Fogel and Nehmad, 2009; Zhang et al., 2013). The following hypothesis is proposed:

H_5: Women are more concerned about online privacy than men.

Although income was not found to have a significant impact on OPC (Li, 2011), many studies indicate that higher income consumers are less concerned about their privacy than low income consumers (Milne and Boza, 1999; O'Neil, 2001; Graeff and Harmon, 2002). Therefore, the following hypothesis is proposed:

H_6: Consumers with a higher level of income are less concerned about their online privacy than lower income consumers.

Past research suggests that privacy concerns are negatively related to consumers' purchasing behaviour. Several studies indicate that consumer privacy concerns are negatively related to purchases conducted by mail, phone or Internet (Milne and Boza, 1999; Phelps, D'Souza and Nowak, 2001). People highly concerned about their privacy exhibited lower level of frequency of online transactions, lower recency, frequency and monetary value of catalogue purchases (Phelps, D'Souza and Nowak, 2001; Akhter, 2014). Privacy concern is also negatively associated with Web purchase (Krohn, Luo and Hsu, 2002). Therefore, the following hypothesis is proposed:

H_7: Consumers who are more concerned about their online privacy will be less likely to purchase products and services online.

Past research has identified various consumer responses to privacy concerns. Marketing theory suggests that consumers might engage into two types of behaviours: approach or avoidance behaviour. In a pleasant environment, consumers will engage in the approach behaviour, while in an unpleasant environment it is highly likely that they will undertake the avoidance behaviour. While approach behaviour is positively related to purchasing outcomes, avoidance behaviour has negative consequences. This paper focuses on consumer avoidance behaviour they engage in to protect their Internet privacy. A variety of consumer responses to online privacy concerns have been identified. Lwin, Wirtz and Williams (2007) suggest that there are three individual actions: (1) fabricate (consumer efforts made to disguise their identity through the use of fictitious or false information), 2) protect (i.e. consumers' use of technology to safeguard their internet domain from potential

intruders), and (3) withhold (i.e. the consumers' refusal to provide information or even to patronize web sites). This study also showed that the greater the online privacy concern, the greater is the likelihood of a consumer to misrepresent and fabricate personal information. Sheehan and Hoy (1999) showed that as individuals' concern with privacy increases, the frequency with which consumers register for a web site will decrease, the frequency with which they provide incomplete information to web sites which request information will increase, the frequency with which they contact an Internet Service Provider about unsolicited e-mail will increase, the frequency with which they send a highly negative message to those sending unsolicited e-mail will increase and the frequency with which they request their names be removed from mailing lists will increase. The study of Son and Kim (2008) showed that except for misrepresentation, privacy concerns had a positive impact on the other five types of behaviours: refusal to provide information, removal of information, negative word-of-mouth, complaining to the company, and complaining to third parties. According to Zviran (2008), privacy concern is positively associated with refraining of surfing, cancelling online spending and reducing volume of online spending, was not significantly influenced by privacy concerns. Based on past research, the following hypothesis is proposed:

H_8: Consumers who are more concerned about their online privacy more often engage in protective behaviour.

3. Research methodology

3.1. The sample and data collection

The data were collected by survey administered to 247 undergraduate students at the University of Zagreb, Faculty of Economics and Business, during the period of 9-13 March 2015. The sample consisted of 247 respondents. Demographic characteristics of the sample are presented in Table 1.

Table 1:

DEMOGRAPHIC CHARACTERISTICS, N = 247

Sample characteristics	Values
Gender, %	
Men	31.17
Women	68.83
Age, average in years	20.36
Household income, in HRK*, in %	
less than 3,000	7.29
3,001 – 6,000	17.00
6,000 – 9,000	20.65
9,001 – 12,000	19.43
12,000 – 15,000	15.79
more than 15,000	19.84
Education level, in %	
Undergraduate study	100.00
Undergraduate study, %	
First-year undergraduate study	2.02
Second-year undergraduate study	95.95
Third-year undergraduate study	1.62
Fourth-year undergraduate study	0.40

Notes: * HRK stands for Croatian Kuna. On March 8, 2015 exchange rate of EUR 1 to HRK was 7.62 (http://www.hnb.hr).

Source: Consumer survey conducted by authors.

In the sample, 31% of the students were men and 69% women, and 96% of them were second-year undergraduate students. The mean age of the sample was 20 years. On average, respondents spend 3-5 hours on Internet per day and 83% of them purchased one product or service online. In the sample 28.34% of students were highly and very highly concerned about their privacy (responses 4 and 5), while 6.48% of respondents were moderately concerned about their privacy (response 3). The majority of respondents (65.18%) expressed low or very low concerns about their online privacy.

3.2. Measurement of variables

A review of relevant literature was used to develop measures for variables applied in this study, which was then adapted to the study context. The survey included questions about attitudes towards relationship marketing (ATRM), online privacy concerns (OPC), third-party seal assurance (TPSA), previous privacy experience (PE), time spent on the Internet (TIME), purchases conducted over the Internet (PURCHASE), protective behaviour (PB), and demographics (gender and income). ATMR, OPC and TPSA were measured by Likert-scaled items, ranging from 1 (strongly disagree) to 5 (strongly agree).

The scale ATMR includes 11 items taken from the study by Milne and Boza (1999). It measures individuals' attitudes towards relationship marketing with respect to information about new products and services they obtain from companies, frequent consumer programs, receiving individual attention from companies, safety, easiness and willingness to buy from this company. OPC was assessed through a ten-item scale used by Korgaonkar and Wolin (1999) and Krohn, Luo, and Hsu (2002), and includes concerns about the security of their financial transactions, financial and personal information they provide to companies.

TPSA includes three items taken from Lee, Choi and Lee (2004). It measures consumer perceptions about seal assurance related to the questions how safe, comfortable and trustworthy it is for consumers to conduct transactions with a retailer over the Internet. The perception of third party certificates was measured in relation to certificates, marks, and symbols authenticated by a third-party provider. Three PE items were taken from the study of Li (2014) and they measure how often consumers have experienced the intrusion into their privacy on the Internet. Items were measured from 1 (never) to 5 (very often). Time spent on the Internet (TIME) measures the amount of time respondents spend daily on the Internet. This variable was measured as: (1) less than 1 hour, (2) 1-2 hours, (3) 3-5 hours, (4) more than 5 hours.

Two outcome variables were analysed in this study: (1) purchases over the Internet and (2) respondents' protective behaviour. Purchases over the internet (PURCHASE) measure how many times a respondent purchased a product or service over the Internet. This variable was coded as: (1) 0, (2) 1 item (3) 2-3 items, (4) 4-10 items, (5) 11-20 items, (6) more than 20 items. Protective behaviour (PB) measures the frequency of adopting protective behaviour by respondents when they conduct activities and transactions on the Internet. This scale was taken from Sheehan (1999) and Sheehan and Hoy (1999). It includes six items and was measured by using a 1–5 scale, where is 1 = never take action) and 5 = always take action.

Demographic variables examined in this study include gender and income. Gender was coded as 1 for men and 2 for women. Income of the household was coded as: (1) less than 3000 HRK, (2) 3,001-6000 HRK, (3) 6,001-9000 HRK, (4) 9,001-12,000 HRK, (5) 12,001 -15,000 HRK, (6) more than 15,000 HRK.

3.3. Data analysis procedure

The data were analysed by using the variety of statistical methods, including exploratory and confirmatory factor analyses and structural equation modelling. Exploratory factor analysis (EFA) was conducted to determine whether all items fell into the five conceptual categories, as expected. Furthermore, the confirmatory factor analysis (CFA) was applied to test the reliability, validity and unidimensionality of the measurement scales. Finally, structural equation modelling method (SEM) was used to analyse the data and test the hypotheses.

4. Results

4.1. Data preparation, KMO and Bartlett's test of sphericity

For the purpose of data screening and preparing the data for structural equation modeling, the variety of tests was performed. Data were assessed for outliers, normality of distribution and multicolinearity. All tests show acceptable values. Two univariate and six multivariate outliers were detected and removed from the further analysis. The final sample size used for further analysis was N=239.

The results presented in Table 2 show that the sample is adequate for exploratory factor analysis (EFA). Namely, KMO indicator needs to be between 0 and 1 and above 0.5, while the p-value of the Bartlett's test of sphericity needs to be significant (Pallant, 2011).

Table 2:

KMO AND BARTLETT'S TEST

Test	Values
Kaiser-Meyer-Olkin measure of sampling adequacy	0.753
Bartlett's test of sphericity	
Approx. Chi-Square	3338.371
df	528
Sig.	0.000

Source: Authors' calculation.

4.2. Exploratory factor analysis (EFA)

For the purpose of exploratory factor analysis (EFA), the principal component analysis and Varimax rotation methods were applied. There were 11 items (ATRM 1, ATRM 3, ATRM 9, ATRM 10; ATRM 11, OPC 8, OPC 9, OPC 10, PB 1, PB 2, PB 6) that had low factor loading on respective factor, high factor loading on some other factor, and were cross-loaded on several factors, and those items were deleted from further analysis. This led to the new factor structure presented in Table 3, in which all items loaded on the intended factors, thus having high factor loadings on these factors and low factor loadings on other factors.

The five-factor solution with factor loadings ranging from 0.46 to 0.92 explained 61.89% of the variance, which is considered sufficient (Bagozzi and Yi, 1988). Factors were labelled according to dominant items, as follows: Factor 1: OPC; Factor 2: TPSA; Factor 3: ATRM; Factor 4: PE; Factor 5: PB.

Table 3:

EFA RESULTS

Items	Component				
	1	2	3	4	5
ATRM_02			0.482		
ATRM_04			0.464		
ATRM_05			0.695		
ATRM_06			0.694		
ATRM_07			0.754		
ATRM_08			0.463		
OPC_01	0.833				
OPC_02	0.806				
OPC_03	0.815				
OPC_04	0.650				
OPC_05	0.758				
OPC_06	0.850				
OPC_07	0.703				
PB_03					0.784
PB_04					0.862
PB_05					0.670
TPSA_01		0.918			
TPSA_02		0.920			
TPSA_03		0.814			
PE_01				0.847	
PE_02				0.907	
PE_03				0.825	

Source: Authors' calculation based on consumer survey.

The standard procedure to test the reliability of scales in EFA is using Cronbach's alpha coefficients. Values for Cronbach's alphas, if deleted, were calculated for each item and the items that decreased the Cronbach's alpha coefficients of respective scales were deleted from further analysis. Cronbach's alpha coefficients indicate adequate level of reliability. According to Nunnally and Bernstein (1994), Cronbach's alphas can be accepted with a value of 0.60, while the value of 0.70 is regarded as the threshold. The Cronbach's alpha values are presented in Table 4, together with other measures of reliability and validity.

4.3. Confirmatory factor analysis

The reliability, validity and unidimensionality of the measurement scales were additionally assessed by conducting the confirmatory factor analysis (CFA). The CFA analysis was done in AMOS 23 applying the maximum-likelihood method and respecting the relevant thresholds and requirements (e.g. Fornell and Larcker, 1981; Anderson and Gerbing, 1988; Hu and Bentler, 1999; Hair et al., 2010; Kline, 2011). For this purpose, the measurement model was developed and assumed that each manifest variable loads on only one factor (latent variable), error terms are independent and factors are correlated. The first two specifications, along with the acceptable model fit, measure the unidimensionality (Kline, 2011).

Table 4:

CFA RESULTS

Path		Items	β	α	*CR*	*AVE*
Attitudes towards relationship marketing	→	ATRM 5: It is safe to buy from organizations I have done business with in the past.	0.98	0.71	0.77	0.64
Attitudes towards relationship marketing	→	ATRM 6: It is easy to buy from organizations that I have done business with in the past.	0.56			
Online privacy concerns	→	OPC 1: I am worried about the security of financial transactions on the web.	0.86	0.85	0.86	0.75
Online privacy concerns	→	OPC 2: I am concerned that my personal financial information may be shared with businesses without my consent.	0.87			
Protective behaviour	→	PB 3: I provide inaccurate information when registering on web sites.	0.88	0.78	0.79	0.65
Protective behaviour	→	PB 4: I provide incomplete information when registering on web sites.	0.73			
Third party seal assurance	→	TPSA 1: The seal assurance label makes me feel safe in online purchasing.	0.95	0.96	0.96	0.92
Third party seal assurance	→	TPSA 2: The seal assurance label makes me feel comfortable toward the Web retailers.	0.97			
Previous privacy experience	→	PE 2: I was a victim of online privacy invasion.	0.81	0.83	0.83	0.72
Previous privacy experience	→	PE 3: I believe that my online privacy was invaded in by other people or organizations.	0.88			

Notes: β – standardised coefficient, α – Cronbach alpha, CR – composite reliability, AVE – average variance extracted.

Source: Authors' calculation based on consumer survey.

Table 5:

DISCRIMINANT VALIDITY

	Means	**St.Dev.**	**1**	**2**	**3**	**4**	**5**
1. ATRM	3.75	0.70	**0.80**				
2. OPC	3.54	1.06	-0.05	**0.87**			
3. PB	2.64	1.02	-0.04	0.06	**0.81**		
4. TPSA	3.30	1.04	0.14	-0.31	0.01	**0.96**	
5. PE	1.71	0.81	-0.02	0.10	0.25	0.06	**0.85**

Note: Diagonal bold numbers represent the square roots of AVE (average extracted variance).

Source: Authors' calculation based on consumer survey.

All items from EFA entered the CFA analysis whereby the number of items per factor was eventually reduced respecting the parsimonious approach, while referring to the rule of minimally two manifest variables per latent variable, as well as the needed ratio of parameters in the model and sample size, as suggested by Kline (2011). This led to the confirmatory factor analysis results, which are presented in Tables 4 and 5.

Confirmatory factor analysis (CFA) shows that the measurement model fits the data well, as shown by GFI = 0.97, AGFI = 0.93, NFI = 0.96, CFI = 0.99, TLI= 0.99, RMSEA = 0.03. The items load on the intended factors and are statistically significant. As it can be seen in Table 4, composite reliability (CR) and average extracted variance (AVE) values indicate that the reliability and convergent validity of constructs are adequate (latent factors are well explained by their observed variables).

Discriminant validity was assessed with correlation analysis along with the square roots of AVE values (Table 5). The results indicate that factors exhibit discriminant validity since the square roots of AVE are greater than the inter-construct correlations. Additionally, discriminant validity is also supported by the notion whereby the average extracted variance for each construct is greater than its shared variance with any other construct. With respect to CFA assumptions and results, it can be concluded that the measurement scales exhibit the characteristics of reliability, validity and unidimensionality.

4.4. Structural equation modelling

With respect to measurement model, the structural model was developed and tested by using Amos 23 and maximum-likelihood parameter estimation method. Standardised structural coefficients can be seen in Table 6.

Table 6:

STANDARDISED STRUCTURAL COEFFICIENTS

Hypotheses	Coefficients	Status
H_1: Positive ATRM are negatively related to OPC.	0.057	Rejected
H_2: The presence of TPSA is negatively related to OPC.	-0.335**	Supported
H_3: Prior negative online experience increases OPC.	0.172*	Supported
H_4: The more time consumers spend online the less OPC will be.	-0.132*	Supported
H_5: Women are more concerned about online privacy than men.	0.162*	Supported
H_6: Consumer with a higher level of income are less concerned about their online privacy than lower income consumers.	-0.104	Rejected
H_7: Consumers who are more concerned about their online privacy will be less likely to purchase products and services online.	-0.262**	Supported
H_8: Consumers who are more concerned about their online privacy more often engage in protective behaviour.	0.064	Rejected

Note: * Statistically significant at $p < 0.05$; **statistically significant at $p < 0.001$.

Source: Authors' calculation based on consumer survey.

The goodness-of-fit indices show that the structural model fits the empirical data well: GFI = 0.95, AGFI = 0.90, NFI = 0.92, CFI = 0.96 , TLI= 0.94, RMSEA = 0.05.

The standardised structural coefficients indicate that TPSA, PE, TIME and GENDER predict OPC, whereby TPSA was the most significant antecedent of OPC ($\beta = -0.34$), followed by PE ($\beta = 0.17$), GENDER ($\beta = 0.16$) and TIME ($\beta = - 0.13$).

Results indicate that TPSA is negatively related to OPC. This means that the presence of third-party seal assurance reduces consumers' online privacy concerns, which supports H_2. PE is positively related to OPC. Thus, the more consumers have had previous negative experiences, the more concerned they were about their privacy, which supports H_3. The results also show that the more time consumers spent online, the less OPC will be. Therefore, H_4 is supported. Regarding gender, females were shown to express higher level of online privacy concerns than

men, which supports H_5. The relationship between income and online privacy concerns was not statistically significant. Thus, H_6 is rejected. Although, coefficient for ATRM is positive, this relationship was not shown to be significantly related to OPC. Therefore, the hypothesis H_1 is rejected.

As for the behavioural consequences of OPC, the results reveal that consumers who are more concerned about their online privacy will be less likely to purchase products and services online. Therefore hypothesis H_7 is supported. Although in expected direction, the analysis did not confirm the assumption that consumers who are more concerned about their online privacy more often engage in protective behaviour. Therefore, H_8 is rejected.

5. Conclusion

The present study proposed a model incorporating several antecedents and consequences of OPC. In general, the results support the proposed framework in Croatian environment. The results show that TPSA significantly influences OPC, followed by PE, GENDER and TIME. TPSA make consumers more confident when doing activities online and reduces OPC, which is in line with past research (Miyazaki and Krishnamurthy, 2002; Nam et al., 2006). The results of this study further show that PE increases OPC, which support the theory also in the Croatian environment (Okazaki, Li and Hirose, 2009).

In the Croatian environment time spent online negatively influences OPC, which means that the more time consumers spend online, it is likely that more knowledge they will accumulate and they might learn how to avoid some of the privacy risks and therefore they might become less concerned about their privacy (Li, 2011). As a result, students in our sample are more confident regarding online transactions. On the contrary, the students in US express a high level of privacy concerns and conduct more often protective online behaviour (Mathiyalakan et al., 2014). However, Croatian students conduct considerably less purchases, which can be explained by the fact that income in Croatia is lower as compared to developed countries.

This study also reveals that women are more concerned about their OPC. This can be explained by the fact that women are more often than men likely to be abused in online environment and as a result they seem to be more careful when doing transactions online. This result is in line with past research (Hoy and Milne, 2010).

Contrary to expectations, ATRM was not shown to be significantly related to OPC, which may be due to the fact that relationship marketing activities of Croatian companies are often not directed toward young consumers, and young consumers have lower level of knowledge of activities that companies provide online.

Finally, data also show that privacy concerns could decrease the likelihood of purchasing online, which is in line with past research (Krohn, Luo and Hsu, 2002). This means that OPC is a factor that significantly hampers online purchases and the growth of e-commerce as well.

Model proposed in this study and its empirical testing could provide valuable information to marketers and policy makers who intend to boost online purchases and e-commerce. The findings highlights the importance of privacy concerns and imply that a decreasing online privacy concerns might positively contribute to online purchases. Primary goal of marketers should be to decrease OPC and take adequate measures to protect privacy of consumers and assure them that the information they provide in online transactions is protected and secure (Akhter, 2014). In doing this, marketers must ensure that privacy policies are highly visible on their web sites, and that the policy is crafted in a simple language (Lwin, Wirtz and Williams, 2007). They should obtain and display privacy-related certificates and logos conferred by credible third-party organizations. TPSA might provide guarantee that transaction on the web are safe, and as a result OPC might decrease. Privacy policy should be communicated to public in order to increase consumer awareness (Lwin, Wirtz and Williams, 2007). Furthermore, marketers should routinely inform consumers when individual-specific information is collected, let them know how the information will be used, and tell them who will have access to the data. Such efforts are of particular importance when they are targeting groups with high OPC such as women, lower income consumers and consumers with negative PE.

Like other studies, this study has a few limitations. This study took a "snapshot" of a sample at a single point in time. The study covers student population, regular Internet users and relatively small sample, and thus the results may not be generalized to all population. Despite these limitations, the study offers valuable results. Future research in this area might investigate consumer behavioural consequences of OPC more in detail, e.g. with respect to satisfaction, loyalty and purchases of various products. Future studies might also examine cross-cultural differences and similarities in OPC, and its impact on online marketing and its consequences to the society as a whole. The sample might be expanded to include adult populations and individuals who do not use the Internet.

LITERATURE

Akhter, S. H. (2014). "Privacy concern and online transactions: the impact of Internet self-efficacy and Internet involvement", *Journal of Consumer Marketing*, (31), 2: 118-125.

Anderson, J. C., Gerbing, D. W. (1988). "Structural equation modeling in practice: A review and recommended two-step approach", *Psychological bulletin*, (103), 3: 411-423.

Bagozzi, R., Yi, Y. (1988). "On the evaluation of structural equation models", *Journal of the Academy of Marketing Science*, (16), 1: 74–79.

Bansal, G., Zahedi, F.M. Gefen, D. (2016). "Do context and personality matter? Trust and privacy concerns in disclosing private information online", *Information & Management*, (53), 1: p1-21.

Budak, J., Rajh, E., Anić, I .D. (2015). "Privacy concern in Western Balkan countries: Developing a typology of citizens", *Journal of Balkan and Near Eastern Studies*, (17), 1: 29-48.

Cho, C.-H., Cheon, H.J. (2004). "Why Do People Avoid Advertising on the Internet?" *Journal of Advertising*, (33), 4: 89–97.

Croatian Bureau of Statistics (2015). "Usage of Information and communication technologies (ICT) in households and by individuals", 2.3.2. Zagreb: CBS.

Dinev, T., Hart, P. (2004). "Internet Privacy Concerns and Their Antecedents, Measurement Validity and a Regression Model," *Behaviour and Information Technology*, (23), 6: 413–422.

European Commission (2013). *Europe 2020: Europe's growth strategy*. Luxembourg: Publications Office of the European Union.

European Commission (2011). "Attitudes on Data Protection and Electronic Identity in the European Union". *Special Eurobarometer*, 359, http://ec.europa.eu/public_opinion/archives/ebs/ebs_359_en.pdf (accessed on December 21, 2015).

Fogel, J., Nehmad, E. (2009). "Internet Social Network Communities: Risk Taking, Trust, and Privacy Concerns", *Computers in Human Behaviour*, (25), 1: 153–160.

Fornell, C., Larcker, D. F. (1981). "Evaluating structural equation models with unobservable variables and measurement error", *Journal of marketing research*, (18), 1: 39-50.

Graeff, T.R., Harmon, S. (2002). "Collecting and using personal data: consumers' awareness and concerns", *Journal of Consumer Marketing*, (19), 4: 302 – 318.

Hair, J., Black, W., Babin, B., Anderson, R. (2010). *Multivariate data analysis*. 7th ed. New York: Prentice-Hall, Inc. Upper Saddle River.

Hoy, G.M., Milne, G. (2010). "Gender differences in privacy-related measures for young adult Facebook users", *Journal of Interactive Advertising,* (10), 2: 28-45.

Hu, L., Bentler, P. M. (1999). "Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives", *Structural Equation modeling*, (6), 1: 1 – 55.

Kimery, K., McCord. M. (2002). "Third-party assurances: mapping the road to trust in e-retailing," *Journal of Information Technology Theory and Application*, 4: 63–82.

Kline, R. B. (2011). *Principles and Practice of Structural Equation Modeling*. 3rd ed., The Guilford Press, New York.

Korgaonkar, P.K., Wolin, L.D. (1999), "A multivariate analysis of web usage", *Journal of Advertising Research*, (39), 2: 53-68.

Krohn, F., Luo, X., Hsu, M.K. (2002). "Information Privacy and Online behaviour", *Journal of Internet Commerce*, (1), 4: 55-69.

Lee, S., Choi, J., Lee, S.G. (2004). "The Impact of a Third-Party Assurance Seal in Customer Purchasing Intention", *Journal of Internet Commerce*, (3), 2: 33-52.

Li, Y. (2011). "Empirical studies on online information privacy concerns: literature review and an integrative framework", *Communications of the Association for information systems*, 28: 453-496.

Li, Y. (2014). "The impact of disposition to privacy, website reputation and website familiarity on information privacy concerns", *Decision Support Systems*, 57: 343–354.

Lwin, M., J., Wirtz, Williams, J.D. (2007). "Consumer Online Privacy Concerns and Responses: A Power–Responsibility Equilibrium Perspective", *Journal of the Academy of Marketing Science*, (35), 4: 572–585.

Malhotra, N.K., Kim S.S., Agarwal, J. (2004). "Internet users' information privacy concerns (IUOPC): The construct, the scale, and a causal model", *Information Systems Research*, (15), 4: 336-355.

Mathiyalakan, S., Taylor, G., Heilman, G.E., White, S., Brusa, J., Guitierrez, P.C. (2014). "Online Privacy Concerns: Gender Differences among Hispanic Undergraduate Students", *Review of Business Research*, (14), 2: 83-88.

Milne, G.R., Boza, M.E. (1999). "Trust and Concern in consumers' perceptions of marketing information management practices", *Journal of Interactive Marketing,* (13), 1: 5-24.

Miyazaki, A. D., Krishnamurthy, S. (2002). "Internet Seals of Approval: Effects on Online Privacy Policies and Consumer Perceptions", *Journal of Consumer Affairs,* (36), 1: 28–49.

Nam, C., Song, C., Lee, E., Park, C.I. (2006). "Consumers' Privacy Concerns and Willingness to Provide Marketing-Related Personal Information Online". *Advances in Consumer Research,* 33 (1), 212-217.

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory*, New York, NY: McGraw-Hill, Inc.

Okazaki, S., Li, H., Hirose, M. (2009), "Consumer Privacy Concerns and Preference for Degree of Regulatory Control", *Journal of Advertising*, (38), 4: 63-77.

O'Neil, D. (2001). "Analysis of Internet Users' Level of Online Privacy Concerns", *Social Science Computer Review*, (19), 1: 17-31

Pallant, J. (2011). *SPSS Priručnik za preživljavanje: postupni vodič kroz analizu podataka pomoću SPSS-a*. 4th ed. Novi Sad: Mikro knjiga.

Phelps, JE., D'Souza, G., Nowak, G.J. (2001), "Antecedents and Consequences of Consumer Privacy Concerns: an Empirical Investigation", *Journal of Interactive Marketing*, (15), 4: 2-17.

Reed, T. (2014). *Digitized Lives: Culture, Power and Social Change in the Internet Era*. New York and London: Taylor & Francis; Routledge.

Sheehan, K.B., Hoy, M.G. (1999). "Flaming, Complaining, Abstaining: How Online Users Respond to Privacy Concerns", *Journal of Advertising*, (28), 3: 37-51.

Sheehan, B.K. (1999). "An Investigation of Gender Differences in On-Line Privacy Concerns and Resultant Behaviour", *Journal of Interactive Marketing,* (13), 4: 24-38.

Son, J., Kim, S.S. (2008). "Internet Users' Information Privacy-Protective Responses: A Taxonomy and a Nomological Model", *MIS Quarterly,* (32), 3: 503–529.

Thomas, R.E., Maurer, V.G. (1997). "Database Marketing Practice: Protecting Consumer Privacy", *Journal of Public Policy & Marketing*, (16), 1: 147-155.

Seybert, H, Reinecke, P. (2014). "Eurostat Internet and cloud services - statistics on the use by individuals, Statistics Explained", http://ec.europa.eu/eurostat/statistics-explained/index.php/ Internet_and_cloud_services_-_statistics_on_the_use_by_individuals Statistics in focus 16/2014 (accessed 21 December 2015).

Yang, H. (2012). "Young American consumers' prior negative experience of online disclosure, online privacy concerns, and privacy protection behavioural intent," *Journal of Consumer Satisfaction, Dissatisfaction & Complaining Behaviour*, (25), 179-202.

Yao, M.Z., Zhang, M.P. (2008). "Predicting User Concerns about online privacy in Hong Kong, *CyberPsychology & Behaviour*, (11), 6: 779-781.

Zhang, R., Chen, J.Q. and Lee, C.J. (2013). "Mobile commerce and consumer privacy concerns", *Journal of Computer Information Systems*, (53), 4: 31-38.

Zviran, M. (2008). "User's Perspectives on Privacy in Web-Based Applications", *Journal of Computer Information Systems* (48), 4: 97–105.

ODREDNICE I POSLJEDICE NA PONAŠANJE I ZABRINUTOST MLADIH POTROŠAČA ZA ONLINE PRIVATNOST U HRVATSKOJ

Sažetak

Online privatnost je prepoznata kao važan čimbenik rasta digitalne ekonomije. Iako nova informatička i komunikacijska tehnologija znatno mijenja poslovnu praksu i nudi nove poslovne mogućnosti, ona također utječe na zabrinutost potrošača za njihovu online privatnost. Glavno pitanje je kako smanjiti zabrinutost za online privatnost i povećati povjerenje potrošača u interakciji s poduzećima u online okruženju. Ovo istraživanje je usmjereno prema identificiranju ključnih čimbenika koji utječu na zabrinutost potrošača za online privatnost i na utjecaj te zabrinutosti na ponašanje potrošača. Podaci prikupljeni anketiranjem studenata analizirani su primjenom eksploarativne i konfirmativne faktorske analize, i modeliranjem strukturnih jednadžbi. Rezultati pokazuju da oznake osiguranja od rizika, prethodno iskustvo na Internetu, vrijeme koje se provede na Internetu i spol statistički značajno utječu na zabrinutost za privatnost, dok se stavovi potrošača prema marketingu odnosa s potrošačima i dohodak nisu pokazali statistički značajnima. Prilikom kreiranja politike zaštite privatnosti, poduzeća bi trebala uzeti u obzir ove čimbenike kako bi se smanjila zabrinutost potrošača za privatnost i povećale kupnje preko Interneta. U radu se diskutiraju implikacije ovog istraživanja za menadžment.

Ključne riječi: zabrinutost potrošača za online privatnost, kupovno ponašanje potrošača, digitalni marketing, zaštita potrošača