On-Line Behaviour of Users With Different Privacy Concerns

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Abstract. *The paper investigate online private and business activities of users with different attitudes towards privacy. Users were categorized as "privacy pragmatic", "privacy fundamentalist" and "privacy unconcerned". Survey among 436 participants showed significant difference in activities connected to information searching, social networking, entertainment, buying/selling products or services online between privacy fundamentalist and privacy unconcerned group. For other explored activities such as financial activities, civic activities and political activities no significant difference was found between the three observed groups, as well as for use of ICT and the Internet as a routine on a daily basis for private activities.*

Keywords. Privacy concern, segmentation index, ICT usage

1 Introduction

The data has never been more important than it is today, since the increased collection of private information online and the superior capabilities of Information and Communication Technologies (ICT) for searching, tagging and aggregating this information provides. Using various data mining techniques retailers can easily extract a vast amount of customers' personal data.

On the other hand, the protection of personal data in Internet has gained significant attention, therefore it is not surprising that in recent years there has been a lot of interest in studying issues relating to privacy concerns that users have and how these might impact their online activities.

Information privacy and data security are important factors for the success of e-commerce, and usually customers connect this terms with the privacy of the information that is generated in online environment and is result of customers' online actions and behaviour. Fundamentally, it includes information collection, sharing, use, reuse, and storage of data such as transactions, personal details, and demographic information (Alharbi et al, 2013). The concern is also heightened because of the massive amount of personal information that businesses collect, and customers generally lose control over the data they provide to businesses (Akhter, 2014). From customers' perspective, privacy concern arises from not knowing how the personal information they provide will be used, shared and protected.

Users' privacy concerns is one of the primary obstacles for customers to participate in e-commerce transactions, however, gathering information about customers is also necessary, in order to gain a better understanding of their preferences (Gurung & Raja, 2016). Despite disclosing information is an increasing part of modern life, "it is necessary to ensure that privacy is protected in a way that does not prevent users from continuing using ICT" (Noain-Sanchez, 2016).

2 Privacy concerns – state of the art

Researchers have devoted much attention to understanding customers' outlooks on privacy concerns. Modern consumers increasingly embrace the personalization of service, whiles disclosure of private information to companies for benefits like receiving personalized service is largely connected to privacy invasion and breaches risks. Meanwhile, Zhu et al. (2017) proposed that personalization should not focus only on the consumers' preference of benefits, than privacy concerns should be incorporated into the analysis for tailoring the personalized services or products.

The use of consumer's personal data, any data or information that can be directly or indirectly traced back to a specific person and can identify person, is growing exponentially as organizations are becoming aware of its potential (Taylor et al, 2015).

As the use of web based transactions requires sharing personal information, the protection and authorized use of such information have become a critical. Customers are exposed to risk connected to identity theft, spyware, adware, spam, phishing, and pharming, among other things (Akther, 2014).

Alharbi et al. (2013) was dealing with understanding of customers' perceived privacy and

security (CPPS) by investigating privacy concerns, data security, and exploring the factors that elevate or minimise these concerns. The study highlights differences in the levels of concern regarding individual privacy in e-transactions, in terms of the amount of information required to complete the process. Furthermore, the importance of maintaining the privacy of customer information and ensuring data security to protect and enhance the organisation's reputation and its customer relationships is stressed.

Akhter (2014) discuss Internet self-efficacy which is focused on beliefs about skills, ability, and confidence related specifically to the use of the Internet. Internet self-efficacy and Internet involvement have a negative impact on privacy concern, but on the other hand Internet self-efficacy and Internet involvement have a positive impact on the frequency of online transactions. In addition, privacy concern has a negative impact on the frequency of online transactions.

Culture of privacy and trust, regulation, knowledge and digital competences play an essential role to mitigate privacy breaches in online mediated environments. They represent "themes linked to user's necessities to understand the functioning of digital environments in order to evaluate the possible repercussions their actions may involve for their privacy" (Sanchez, 2016).

Hargitai and Marwick (2016) considered how young adults' attitudes about privacy can be reconciled with their online behaviour. Young adults understand and care about the potential privacy risks associated with disclosing information online. They engage some privacy-protective behaviours on social media, but they feel that once information is shared, control over it is lost.

The Privacy segmentation proposed by Alan F. Westin represents one scheme for categorizing the different levels of privacy concerns and divides persons into "privacy fundamentalists," "privacy pragmatists," and the "privacy unconcerned" (Dolnicar and Jordan, 2006). Privacy Fundamentalists perceive privacy as an especially high value, they believe that more individuals should refuse to give out information (all information they are asked for). They favours enactment of strong laws to secure privacy rights and control how organization are using it. They feel that they have lost a lot of their privacy and are strongly resistant to further disclosure of themselves. Privacy Unconcerned usually have low to no levels of distrust, have no problem with disclosing their personal information to government authorities or businesses. Privacy pragmatists are very concerned to protect themselves from the misuse of their personal information by other people and organisation, have strong feelings about privacy and have medium to high levels of distrust (Urban and Hoofnagle, 2014).

Westin conducted more than 30 privacy surveys where details about used privacy indexes were not published in academic papers, but in original survey reports. Kumaraguru and Cranor (2005) reported on several privacy indexes created by Westin in order to summarize his survey results in period from 1990 to 2003. Westin surveyed the general level of privacy concern of the public and studied the attitudes about specific privacy-related topics, like confidence in organizations that handle personal information, acceptance of a national identification system, and use of medical records for research. Reports includes 14 Westin surveys that were conducted via telephone and surveyed randomly-selected statistical samples of the United States adult population. During 1994 - 2000 the percentage of Fundamentalists in the public have remained almost the same, around 25%. The number of Unconcerned had decreased from 25% in 1990 to 10% in 2003. Pragmatist group was varying between 57% in 1991 to 64% in 2003.

Jai and King (2016) researched the impact of age, gender and customer loyalty on the willingness to share personal information with third-party advertisers and data brokers, towards customer privacy groups (Westin's privacy segmentation). Younger customer are more willing to share their personal information, excluding for privacy fundamentalist group. Males have a greater willingness to disclose and to give permission to share their personal information to advertisers and data brokers. Attitudinal loyalty and behaviour loyalty were differently perceived among all groups of privacy segmentation.

Hann et al. (2007) investigated the differences in privacy preferences. They categorized respondents in to three distinct segments (according their rankings of the various benefits and concerns connected to privacy): privacy guardians, information sellers, and convenience seekers. Privacy guardians were sensitive to concerns connected to online information. Information sellers are usually willing to provide information in exchange for money. Convenience seekers are willing to provide information in exchange for convenience.

The purpose of this paper is to advance our understanding of how persons that have characteristic of privacy fundamentalist, privacy pragmatics or privacy unconcerned perceive issues connected with online privacy.

3 Research problem

With the aim to investigate the differences in usage of ICT and the Internet for daily private/business activities among three groups of respondents, towards Westin's privacy segmentation: 1) the privacy unconcerned 2) the privacy pragmatists and 3) the privacy fundamentalists, first we have created a measurement instrument (questionnaire) for data collection. Further in the paper, "privacy unconcerned respondents" which characterizes no or low concern and distrust represents Group 1, the "privacy pragmatists" which characterizes mid-level concern and distrust represents Group 2,

while the "privacy fundamentalists respondents" which characterizes high privacy concern and high distrust in government, business, and technology represents Group 3.

Measurement instrument (questionnaire) comprising 10 items related to daily private activities of people such as searching information, learning activities, communication activities, social networking, entertainment, commercial activities, financial activities, civic activities, political activities, usage of ICT and the Internet on daily basis as a routine, 4 questions related to company general information in which respondents are working and 3 items related to concerns about privacy in the online environment. Items were coded on a 5-point semantic ordinal scale ranged from "1-not at all" to "5-very frequently" and "1-strongly disagree" to "strongly agree". Selection of respondents in the above mentioned three groups was performed on the way to taking the mean value of the three questions that have been referred to concerns about privacy in the online environment. Group 1 - mean value from 1.1 to 2.3, Group 2 - mean value from 2.4 to 3.6 and Group 3 - mean value from 3.7 to 4.9.

Data collection lasted for a period September - December 2015 on sample of SMEs and large Croatian companies. The database of Croatian Chamber of Economy called BIZNET was used for collecting Company contacts (2017). All companies in the category of SMEs and large enterprises from all counties in the Republic of Croatia were included in the sample, while small enterprises were collected clustered by counties, with the availability of contacts separated by those companies that have e-mail contact.

The self-administered online survey approach was used, an online questionnaire was designed through free online survey and questionnaire tool KwikSurveys (2017). The link on online questionnaire was sent to the 23,805 e-mail addresses of SMEs and large companies. After data collection, in the analysis of data in addition to standard descriptive statistics, to determine whether there were any differences between three groups (privacy unconcerned, privacy pragmatists and privacy fundamentalists) of users/employees the analysis of variance was used (Stevens, 1992).

4 Discussion

After research conducted on Croatian SMEs and large companies correctly filled out the questionnaire a total of 436 respondents/employees (i.e. 1.83% of the sample), of which 406 respondents/employees was from small, 25 from medium and 5 from large companies. Of 436 respondents 74 were selected in Group 1 (privacy unconcerned), 196 in Group 2 (privacy pragmatists) and 166 in Group 3 (privacy fundamentalists). Statistical analysis was performed using statistical tool STATISTICA.

As can be observed from the presented results of analysis of variance (Fig. 1) for activities related to "information searching" a significant difference is confirmed between the first (privacy unconcerned) and third group (privacy fundamentalists) of respondents (df1=2, df2=433 F=2.460, p=0.005), wherein the group so-called privacy unconcerned use ICT and the Internet for information searching most frequently, 97% (Group 1 n=72) of them use "frequent" or "very frequent".

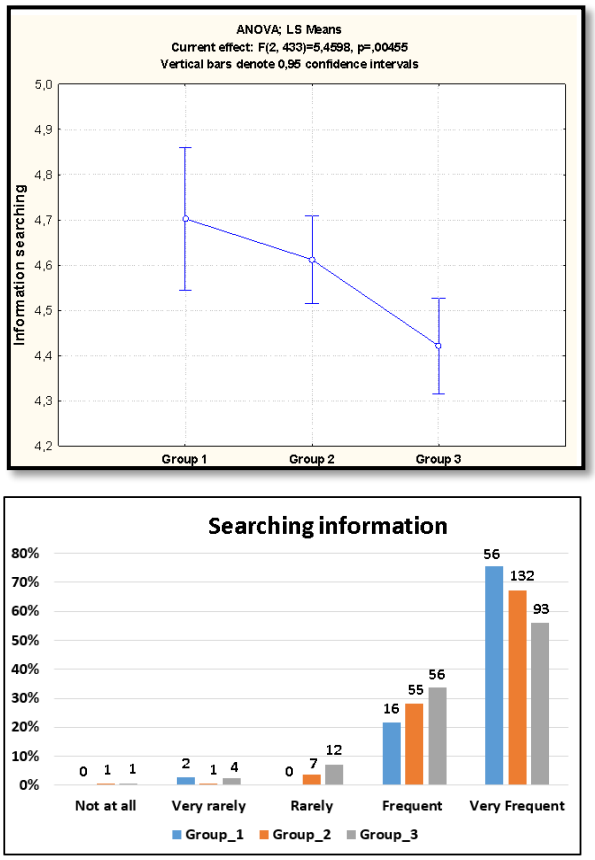

Figure 1. The use of ICT and the Internet for information search

As well as for "information search", in "social networking" (Fig. 2) via ICT and the Internet (Facebook, Twitter, YouTube) significant difference can also be noticed among the first and third group of respondents (df1=2, df2=433 F=3.028, p=0.049). From the group which characterizes high privacy concern (Group 3, privacy fundamentalists), it does not work at all or rarely or very rarely, as many as 50% (Group 3 n=83) of respondents, unlike a group that is not concerned about security and privacy (Group 1, privacy unconcerned), nearly 70% (Group 1 n=51) of respondents declared that doing "frequent" or "very frequent".

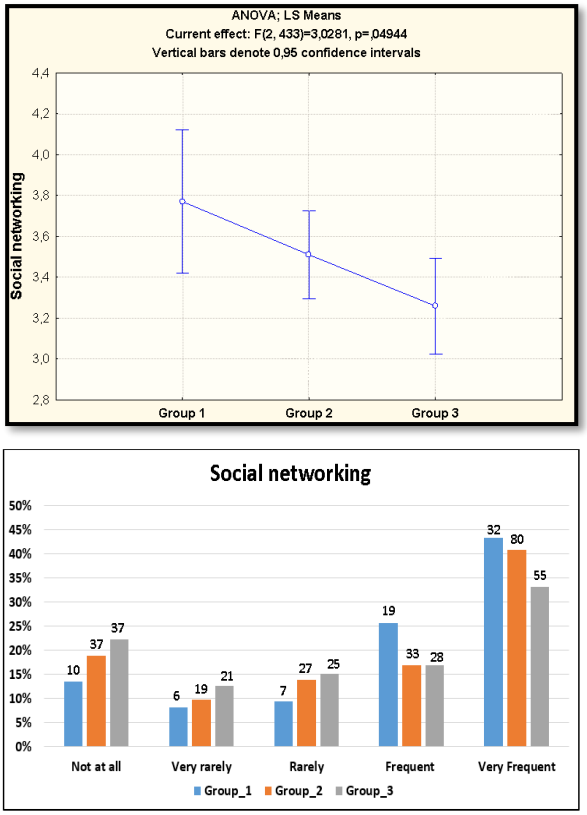

Figure 2. The use of ICT and the Internet for social networking

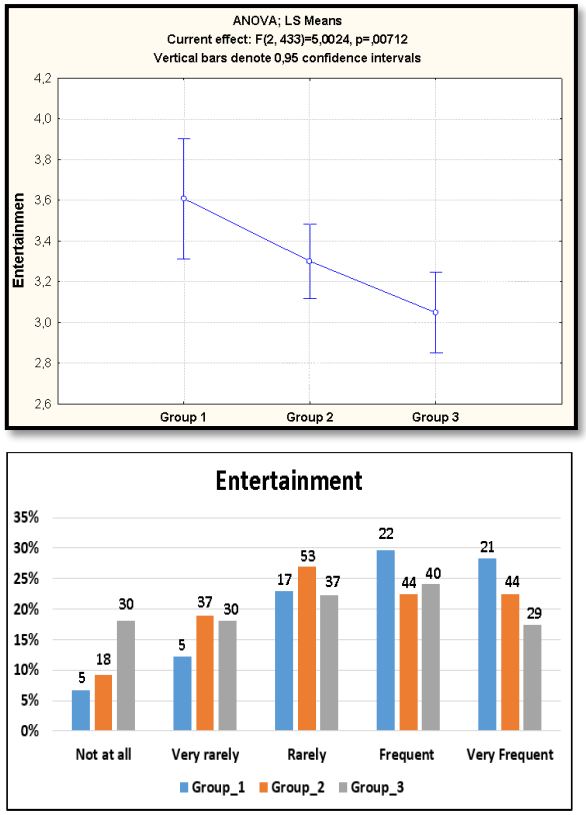

Figure 3. The use of ICT and the Internet for entertainment

When researching the use of ICT and the Internet from the aspect of "entertainment" (Fig. 3), one can notice that significant difference was also confirmed between the first and third group of respondents (df1=2, df2=433 F=5.002, p=0.007) and that the group so-called privacy unconcerned (Group 1) use ICT and the Internet for entertainment most frequently, 58% (Group 1 n=43) of them have declared that they do that "frequent" or "very frequent".

Fig. 4 shows that significant difference was also confirmed among the first and third groups of respondents when researching the use of ICT and the Internet for "commercial activities" such as buying / selling of products and services, searching for information about products and services, comparing products and services (df1=2, df2=433 F=3.363, p=0.036), and in this case the group so-called privacy unconcerned (Group 1) use ICT and the Internet for commercial activities most frequently, even 78% (Group 1 n= 58) of them have declared that they do that "frequent" or "very frequent".

For other explored aspects of using ICT and the Internet such as activities", "financial activities", "civic activities" and "political activities" no significant difference was found between the three observed groups of respondents, as well as for "use of ICT and the Internet as a routine on a daily basis for private activities". Since no significant difference was confirmed for the aforementioned activities, therefore, for these activities, the results of the research are shown only descriptively (Fig. 5).

As can be seen from Fig. 5 in relation to communication activities (e-mail, text messaging, chat and forum), all three groups of respondents prefer to communicate via ICT and the Internet, because more than 95% of respondents stated that they do it "frequent" or "very frequent" (Group 1 n=72, Group 2 n=190, Group 3 n=159). Financial activities (banking, investment activity) is used by more than 75% (Group 1 n=56, Group 2 n=159, Group 3 n=132) of respondents "frequent" or "very frequent", and also learning activities (educational materials, employment opportunities, training courses), more than 65% (Group 1 n=53, Group 2 n=126, Group 3 n=107) of respondents stated that they do it "frequent" or "very frequent".

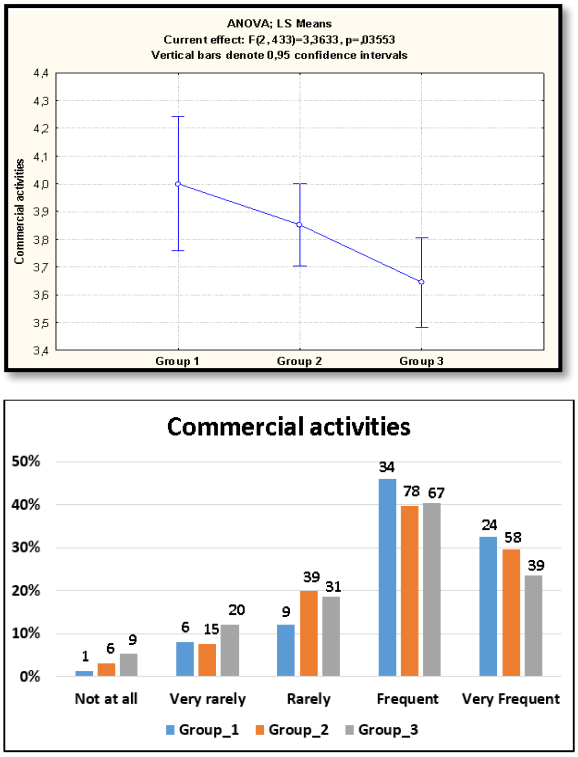

Figure 4. The use of ICT and the Internet for commercial activities

Taking part in "civic activities", such as signing petitions, voting or discussions, is not customary via ICT and the Internet in all three groups of subjects, because more than 89% (Group 1 n=66, Group 2 n=176, Group 3 n=148) of respondents in all three groups stated that "do not use" ICT and the Internet for purposes of civic participation, or use it "rarely" or "very rarely".

A similar situation can be observed in relation to "political activities" (contacting politicians, participation in political parties), in this regard, more than 95% (Group 1 n=70, Group 2 n=192, Group 3 n=160) of respondents from all three groups arguing "not" to participate or "rarely/ very rarely" in political activities via ICT and Internet.

Lastly, the aim was to investigate whether there is a significant difference in the use of ICT and the Internet between the three groups of the respondents regarding the "use of ICT and the Internet as a routine on a daily basis for private activities". It has been found here that there are no significant differences between the three groups of respondents. There is a significantly larger percentage of examinees in all three groups declared themselves that using ICT and the Internet for private purposes has become their daily routine. Most of the respondents in all three groups (almost 90% Group 1 n=68, Group 2 n=183, Group 3 n=145) have argued that ICT and the Internet on a daily basis for private activities use "frequent" or "very frequent"

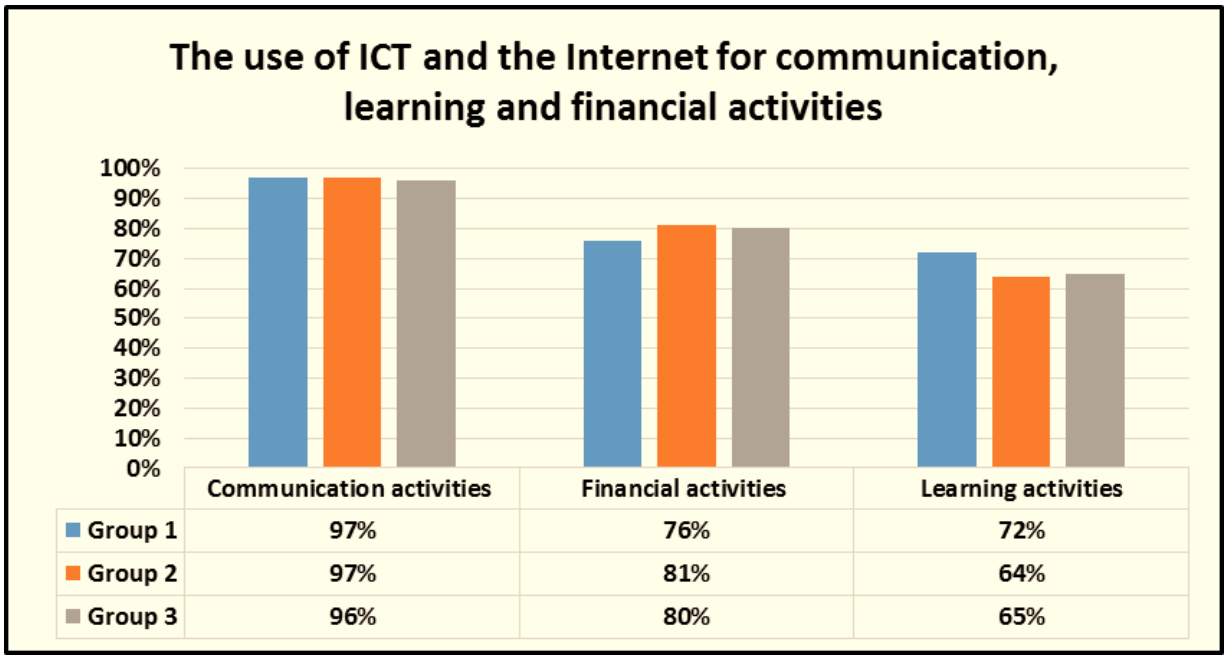

Figure 5. The use of ICT and the Internet for communication, learning and financial activities

5 Conclusions

Understanding the relationship between values and attitudes toward privacy in general and their online privacy concerns is important because it expands understanding of the way that values influence behaviours in the online context. This research attempts to further elucidate the nature of privacy concerns by examining privacy towards three privacy group. Of 436 respondents 74 were selected in group privacy unconcerned (16%), 196 in group privacy pragmatists (45%) and 166 in group privacy fundamentalist (39%). In addition, survey showed significant difference in activities connected to information searching, social networking, entertainment, buying/selling products or services online between privacy fundamentalist and privacy unconcerned group.

According to the Westin's survey (2003), the public could be classified on the basis of their different attitude toward privacy: the privacy unconcerned constitutes 20% of the public, privacy fundamentalists constitute about 25%, and about 55%, are privacy pragmatists. In our research we didn't use the same items as Westin in order to categorize respondent, yet we get the same structure – most of respondents were privacy pragmatic, but we have more respondents in privacy fundamentalist group, and less in privacy unconcerned group. Result presented in this paper can be interpreted in manner that difference in profile structure (more fundamentalist, less privacy unconcerned) can be explained with change in individuals' privacy awareness. Recent research suggest that Westin categorization can be expand on individual privacy behaviours and awareness of related privacy controls where Wisniewskia et al. (2017) propose six privacy management profiles: Privacy Minimalists (22% of participants), Self-Censors (11%), Time Savers/Consumers (17%), Privacy Balancers (36%), Selective Sharers (5%), and Privacy Minimalists (22%). Next step in our investigation is to explore the correlation of privacy concerns and usage of various e-services for private and business activities.

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