doi: 10.36689/uhk/hed/2021-01-067 HED Hradec Economic Days

Altruism and the Privacy Calculus

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Abstract: This paper analyses the privacy calculus as an explanation of privacy thinking and behavior and extends its concepts with altruistic thinking which is becoming more relevant these days as companies create patterns of behavior, users' profiles and categories and one's behavior affects many others, e.g., concerning health issues. Privacy calculus attempts to explain the privacy paradox according to which people express their concern about privacy but behave differently. Our results show that students respect altruistic principles, are aware of both individual and social benefits and risks of privacy disclosure, but their real behavior in the online environment is influenced by these ideas a little only. The reason why the respondents' intention does not comply with their behavior may consist in their distrust and confusion concerning technology. The movement of explainable technology proves relevance of these ideas. Our results are relevant for companies formulating their privacy statements and respecting users' preferences regarding their privacy.

Keywords: privacy paradox; privacy calculus; altruism; privacy disclosure; benefits and risks in exchange of privacy

JEL Classification: D82; M14; M31

1. Introduction

Privacy is a topic, that nowadays arouses fear, stress, anxiety and even protests. However, thoughts about private sphere of life can be found even in earlier works of great authors and philosophers, as Plato or Aristotle. Laws concerning private property like private households or real estates are found in Code of Hammurabi from about 1754 BC. Humankind has been for sure for a long time interested in this opposition of two realms –the private realm and the public realm. These two realms are in obvious contrast and one excludes the other. Private realm is the world of our own personal, intimate, and sometimes even embarrassing information. On the other side, in the public realm no information belongs to no individual and information is not under private protection (Swanson, 1992; Nissenbaum, 2010).

Technological progress has blurred the borderline between these two realms and world wide web changes the way people look on private information. Thanks to Nissenbaum (2010) we can take better view on how people deal with their personal information and are willing to transform it into public data in certain contexts. Arguments like "I have nothing to hide" are common and the degree of private to public transformation deepens (Solove, 2011). Why is this change of thinking occurring in our times of great technological progression is still the topic of debates and needs further research. In addition to this lack of interest in privacy, there are other reasons people share their personal information on the internet (George, 2004). Susan Waters (2011) made a research on why people disclose personal information on

Facebook and found multiple reasons. She ascertained multiple dimensions of disclosure such as "habitual behaviour" and "keeping up with trends", but those notions are rather vague. We think that those reasons could be broken up to smaller psychological areas to help us understand why people impair their privacy. Altruistic part of human behaviour could tell us more about these issues.

1.1. Online Privacy

Online privacy combines in its concept people, information about them and technology. People carry out many types of social interaction in the online environment and reveal much information. There are areas that are very sensitive in the area of privacy, especially health information or religious information.

Privacy can be defined as the right to be left alone (Warren & Brandeis, 1890). However, it is associated with many problems like contextual and cultural dependence, virtual identity etc. And that is why we can say with D. Solove (2006) "Privacy is in disarray and nobody can articulate what it means".

1.2. Altruism

We will work with definition of altruism published by Thomas Nagel (1970) that says: "By altruism I mean not abject self-sacrifice, but merely a willingness to act in the consideration of the interests of other persons, without the need of ulterior motives." From this definition we can ascertain that truly altruistic behaviour can be seen when individual acts without ulterior motive, just helping other people. Batson et al. (1988) formulate the hypothesis that altruism is an egoistic act, aiming at self-rewarding, and at helping others as a side product. The main motive for helping others would afterwards be the warming, glowing feeling of giving (Andreoni, 1989; Andreoni, 1990). Some argue that this motive could exist on its own, without altruistic nature of an individual (Andreoni, 2007), but it is also possible that good feeling from giving and altruism are complementary aspects. Moreover, these two aspects could be linked, because altruistic identity of an individual is necessarily connected to warm and glowing feeling of giving and generous acts.

Employing altruistic motives in the privacy consideration is a new idea which has not been considered so far. But there are reasons justifying its use in the privacy context. Many situations including the health crisis of Covid-19 relate private information to public context. Private information can help or harm others. Secondly, private information is used by many companies to make users' profiles, segments, and patterns of behaviour. Private information is a source of information about the general public. Users are becoming aware of it.

1.3. ICT and Privacy

The development of digital technologies, social networking, big data has changed the life of many people and has led to uncontrolled electronic panopticism (Smith & Collars, 2015). Users are permanently observed and information about them is collected and processed. Users express concerns about their privacy, but use technologies very intensively, motivated by popularity, usability, and low price of many services. This discrepancy between the

expressed concern and actual behavior is called the privacy paradox. There are many theories explaining the privacy paradox. There are rational theories using the cost-benefit comparison of online disclosure. Other theories question the human rationality arguing that man's decision making is biased, irrational and heuristic.

1.4. Privacy Calculus

One of the cost-benefit theories is called privacy calculus. This theory as described by Laufer and Wolfe (1977) anticipates that people before deciding about disclosing their private and personal information weight possible future consequences of such decision. Disclosing personal information can lead to future gain of utility, and thus could be beneficial despite the risk taken. Benefits gained through information disclosure can be both material and abstract (monetary benefits, faster access via GPS guidance, better social relationships etc.). Risks can take form of losing access to information, inability of controlling information transmission and subsequent risks of unauthorized access. (Dinev & Hart, 2006). Privacy calculus assumes that people consider their decisions economically and disclose their private information while considering future utility against potential risk, calculating if disclosure is beneficial or not.

1.5. Economic relevance of online privacy

Before the pandemic and even more during it the use of technologies and online services has intensified. That has increased the concern of users about their personal information disclosed online. Responsible personal information handling affects company's reputation and influences its competitive potential. Especially during the pandemic online services are necessary for the smooth running of the economy. Users use them if they trust them. That is why it is necessary to study users' opinion on privacy in the online environment.

2. Methodology

We used a questionnaire to test users' relations to privacy disclosure risks and benefits and the role of altruism in decisions about privacy. The role of altruism in privacy thinking is relatively new as privacy is usually related to the subject considered as isolated. The questionnaire was distributed per email in December 2020 and January 2021 to students of University of economics. Out of 771 students that received the questionnaire, 159 (21%) responded but only 55 (7%) of responses were usable for further analysis as only they included all information and all answers needed. For the analysis of the results statistical methods of descriptive and inferential statistics were used. We calculated the mean (M), standard deviation (SD) and mode. Our sample consists of 28 men (51%) and 27 women (49%). We used the 6-point Likert scale in the answers; 1 meaning definitely yes, 6 meaning definitely no.

3. Results

In the first set of questions, we analyzed how students behave online. Students are careful online in the average values of the Likert scale, but rather do not read the privacy

statements of online services. Students sometimes use technical instruments to protect their privacy.

Table 1. Privacy protecting behaviour

	Disclosing private information online	Reading terms and conditions of privacy protection	Using technical means for privacy protection
M	3.5	4.3	3.1
SD	0.9	1.1	0.9
Mode	3	4	3

Students don't appreciate benefits of personalized approach on the average very much, only personalized help is welcomed.

Table 2. Benefits of privacy disclosure

	Personalized services	Personalized information	Cheaper products and services	Easier life	Personalized help
M	3.4	3.2	3.5	3	2.6
SD	1.3	1.1	1	1	0.9
Mode	3	3	3	3	2

The same holds true for risks related to privacy disclosure. All types of risks are evaluated similarly – students are not much afraid of them. However, in both categories there are students who appreciate the benefits more and are afraid of the risks. The mean is located in the middle of the Likert scale.

Table 3. Risks of privacy disclosure

	Bad feeling of fear	Revealing unintended consequences	Manipulation	Unwilling attention, misuse, blackmailing etc.
M	3.5	3.4	3.2	3.2
SD	1.3	1.2	1.2	1.3
Mode	4	3	3	3

The correlations were tested with the Spearman correlation coefficient. We found positive correlation between using technical instruments for privacy protection and fear of manipulation ($r_s = 0.3$; $p = 0.02$) and using technical instruments and fear of unwilling attention ($r_s = 0.29$; $p = 0.03$). Other relations were not significant at the 5% significance level. That means students do not evaluate the benefits and losses related to privacy disclosure when disclosing their private information with the exception of using technical instruments. Their use is related to the fears of manipulation and unwilling attention. Maybe the meaning of privacy has changed for the young generation and the young people consider other criteria when deciding about privacy disclosure, like habits, behaviour of others, trust in service providers etc. That will be the topic of our further research. Alternatively, students don't behave rationally and there is no pattern expressing their behaviour and the young generation is aware of benefits and risks of online privacy, but their behaviour doesn't express any pattern.

As for altruism, we found that students are empathic and altruistic (M = 2.5; SD = 1.23). The results are independent on gender ($X^2 = 5.5$, $p = 0.24$).

Table 4. Types of altruism

	Reciprocal service	Pure altruism (without reciprocity)	Good inner feeling	Popularity in society	Helping relatives or friends	Duty
M	3.1	2.7	2.1	3.3	1.7	3.9
SD	1.2	1.1	0.8	1.3	0.7	1.1
Mode	4	2	2	3	2	4

None of the types of altruism is correlated to gender. Unsurprisingly, students prefer their relatives and friends, the least popular type of altruism is the one based on duty. Apart from Students accept.

We investigated some advantages and disadvantages of privacy disclosure related to the community. Students disagree with manipulation of others and appreciate personalized services to other community members based on their personal information.

Table 5. Advantages and disadvantages of privacy disclosure for the community

	Revealing new sensitive information about the community	Manipulation of others	Personalizes services to other community members	Protection of other people
M	3.2	2.6	2.6	3.2
SD	1.2	1.3	0.9	0.9
Mode	4	2	3	3

We found correlation between using technical instruments for privacy protection and provision of personalized services to other people by using one's private information ($r_s = 0.351$, $p = 0.005$). That can be explained by students' attempt to disclose their private information to reliable providers only with the intention that the information will be used properly.

4. Discussion

We did not confirm the existence of privacy calculus in students' decision about privacy. There are other factors influencing their online privacy behaviour. However, we confirmed they consider benefits and losses for the whole community even though they do not adapt their online behaviour according to them, with the exception of using technical instruments that reflect the social benefits. Probably the altruistic approach is used in special contexts and is not a general approach.

A hint suggesting students' way of thinking may show the answers to questions asking if they think it is easy to misuse their online information. The mean answer was 2.1, standard deviation 0.9. That means students are skeptical about the online environment. 92% of answers were positive (definitely yes, rather yes, yes). Another question asked about their trust in effectivity of instruments of online privacy protection. Here the mean answer was 3.4 and standard deviation 0.9. Here 84% of answers were in the 3-6 category of the Likert scale.

That shows a little skeptical opinion, too. Daniel Solove (2008) also speaks of confusion on privacy. Stensson and Jansson (2014) as well. Confusion could explain students' irrational behaviour because they do not believe in the effects of their behaviour even though they are aware of them. Recent debates on explainable ICT (Adadi & Berrada, 2018) support this conclusion. There may be a difference between students' intention to consider both individual and social benefits and risks, but because they do not believe in effectiveness of such behavior they do not behave accordingly in reality.

Our research is relevant for terms and conditions of many internet services as it analyses users' concerns related to privacy and adopts a wider perspective considering the public interests which is relevant for services that use the private information for the whole society.

5. Conclusion

We live in a dynamic society where many new devices influence our life. Many of our concepts are under pressure and are subject to many changes or their hidden aspects become more visible. We analyzed the privacy calculus and its possible extension with altruistic thinking. Our results show that students respect altruism, are aware of advantages and disadvantages of privacy disclosure, consider them in their thinking, but this thinking does not affect their behavior. An explanation of this result may lie in students' distrust and confusion concerning technology operation.

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