ERASMUS UNIVERSITY ROTTERDAM
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Master Thesis Behavioural Economics

Can the privacy paradox be explained by the underlying emotions of individuals?

Abstract

Privacy issues arise on a daily basis and while people raise their concerns, the actual self-disclosure of private information online remains high. This research investigates the relationship of positive and negative affects on the actual self-disclosure for any kind of information on any type of platform. The data is obtained based on a survey and contains 142 respondents. Using a multilinear regression model, the results show that positive affects are positively related to the actual self-disclosure, irrelevant which kind of information or type of platform. For negative affects only a relationship is found for the actual self-disclosure on social networking sites.

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Table of contents

1. Introduction

"*Privacy concerns an individual's ability to control what personal information about them is disclosed, to whom, when, and under what circumstances*" – Blank, Bolsover, & Dubois, p3 (2014)

Nowadays, internet is taking over the control of individuals' life. People buy online, communicate online, check their bank accounts online, and book activities online. Apart from that, people share what they think, like, did, or will do via social media, with friends and family or even people they do not know. Although it is viewed as a pleasant feature added to our daily life, there are also many implications coming along with it.

One of the major implications that comes along with activities on the internet is the exchange of private information. Almost all the transactions and interactions that people make on the internet include personal information. This might be either personal details, such as your email and home address, or more extensive information, such as your birth date and identification number. In fact, when visiting a website, your clicks, preferences, and likes will be stored in a database. Although recently the General Data Protection Regulation (GDPR) has been introduced to coordinate data privacy law in Europe, people have problems understanding the consequence of self-disclosure and the threats of sharing their data. Consequences might be for example the trade of personal data between parties, identity theft, or use of data for differentiated sales strategies. The discussion of privacy appears in various domains (e.g. e-government, e-commerce, social networking services) and for different purposes (e.g. regulation, tax mechanisms, personalization of recommendation systems, small rewards). The interest of economists related to the discussion of privacy is predominantly on the informational aspect (Acquisti, Taylor, & Wagman, 2016). Hence, privacy economics relates to the trade-off between sharing and protecting data.

This decision of disclosing private information can be distinguished at two different stages: the intention to disclose information and the actual behaviour of disclosing information. The intention to disclose information online is often very low as the attitude of internet users is mainly negative and individuals feel extremely dubious about the fact that personal matters are spread online (Baek, 2014). While people raise their concern about privacy, their actual behaviour shows that they are voluntarily disclosing personal information according to Baek (2014). This phenomenon is called the "privacy paradox". The privacy paradox refers to the dichotomy between privacy attitudes and privacy behaviour in disclosing personal information online.

Which factors drive the gap between the intention to disclose information and the actual self-disclosure is investigated by much research. Ginosar and Ariel (2017) list three indicators that explain

the privacy paradox, namely: (1) nature of the benefit, (2) degree of trust towards the particular website, and (3) degree of knowledge, or online literacy, a person possesses. However, similar to the research of Ginosar and Ariel (2017), much research is focused on the classical rational agency theory. They neglect that most agents are irrational, as is suggested from a behavioural economic perspective. Specifically in the online domain, many stimuli are involved and impulsive reactions are triggered. Hence, people do not decide whether to disclose private information based on the privacy issues involved, self-disclosure is determined by their reaction on the impulses. People are easily nudged towards the most preferred amount of data sharing by companies via cookies (Coventry et al., 2016).

The affect heuristic is one of the most acknowledged behaviour biases in decision making (Kokolakis, 2017). In the privacy context, the affect heuristic causes limited ability of individuals to make decisions based on their privacy concern. Hence, at the moment of self-disclosure, individuals underestimate the consequences and risks of sharing private information (Kokolakis, 2017). The affect can play a role as a motivator in decision making and is instantly translated into an action involving risks (Peters et al., 2006). Therefore, this paper will focus on how affects can explain the divergence between the intention to disclose information and the actual privacy behaviour. Previous papers explore the impact of affects on the actual self-disclosure, but often focus on the indirect effect. In other words, according to this theory affects adjust the privacy concern which determines the actual self-disclosure. The idea behind this is that the privacy concern is adjusted by the perceived affects. However, here the theory builds on that individuals make a weighted decision. In this paper the focus lies on how affects have a direct impact on the actual self-disclosure.

This paper will contribute to the current literature by investigating the direct impact of positive and negative affects on the actual self-disclosure of individuals. It will combine previous approaches to give an adequate view on how affects influence the actual self-disclosure for different kinds of information and different types of platforms. As a result, the implications of this paper are applicable to many areas. Policy makers might for example consider how to stimulate certain emotions to increase the awareness of individuals about the threats and compliances of sharing private information. On the other hand, companies might use the knowledge to increase the actual self-disclosure by stimulating positive emotions. The main research question is: "*Can the privacy paradox be explained by the underlying emotions of individuals?"* To be able to answer this question, three sub-questions are addressed. First, does the privacy paradox exist (i.e. is there a gap between the intention to disclose information and the actual self-disclosure)? Second, what is the impact of positive and negative affects on the actual self-disclosure? Third, how do the positive and negative affects differ for different kinds of information and different types of platforms?

The research is based on a cross-sectional study to obtain data about the specific affects towards sharing personal information online. While previous studies focus on affects in general, here the distinction is made between affects regarding self-disclosure on social networking services and e-commerce services. Further, a distinction is made for the self-disclosure of identifiable information and profiling information. Hence, it is of interest to provide an overview how affects differ across these domains. In the next section, I discuss related literature to introduce different explanations for the privacy paradox and how affects might play a role. In section three, the research model is presented along with the key hypotheses. The methodology is explained in section four, and in section five the results of the model are presented. In section six, the results are discussed. Finally, in section seven, the most important findings are concluded and recommendations for future research will be given.

2. Literature review

2.1 Relevance of privacy in economics

So far, much research already focused on the concept of privacy. In this paper, privacy is defined as "*an individual's ability to control what personal information about them is disclosed, to whom, when, and under what circumstances*" (Blank, Bolsover, & Dubois, p. 3, 2014). The interest of economists related to the discussion of privacy is predominantly related to the informational aspect (Acquisti, Taylor, & Wagman, 2016), where privacy economics relates to the trade-off between sharing and protecting private information. The study in this paper concerns privacy in the online environment.

The main underlying phenomenon in privacy economics is the *privacy paradox*. The privacy paradox refers to the gap between the intention of individuals to disclose private information and the actual disclosure behaviour. While individuals tend to have negative attitudes towards sharing personal information, their actual behaviour shows that they disclose important personal information online (Baek, 2014). It is worth mentioning that while studying the self-disclosure, including the privacy paradox phenomenon is important. Not doing so, no distinction is made between privacy attitude and the privacy concern (Acquisti & Grossklags, 2005). Research into the privacy paradox focuses particularly on exploring whether there is a gap between the stated intention to disclose private information and the actual behaviour of disclosing private information. Although the privacy paradox is not much of a mystery anymore as previous research already present some coherent explanations (Kokolakis, 2017), there is a lack of research that investigates the actual drivers of this gap in a behavioural context. In the following paragraph, the findings of previous papers are considered, starting off with comparing findings using a rational economic approach versus a behavioural economic approach

2.2 Previous literature of privacy economics

The findings of previous papers discuss various explanations for the privacy paradox and prove that people are very willing to share information online even if they have significant privacy concerns (Benndorf & Normann, 2018; Beresford, Kübler, & Preibush, 2012; Grossklags & Acquisti, 2007; Hallam & Zanella, 2017; Jung & Park, 2018; Kim & Kim, 2018; Norberg, Horne, & Horne, 2007; Wakefield, 2013; Yu, Hu, & Cheng, 2015). Empirical evidence for this phenomenon is provided by a few researchers. For example, Benndorf and Normann (2018) analyse for which amount individuals are willing to sell their personal data in a lab experiment to quantify the economic value of personal information. The study concerns Facebook data of individuals and the results indicate that for 19 euros individuals are willing to share these details. While this amount is considerably high, the study of Grossklags and Acquisti (2007) finds that individuals already are willing to sell their private information for only 25 cents. Additionally, they show that individuals are not even willing to pay 25 cents to protect their personal data. The difference between the findings of Benndorf and Normann (2018) and Grossklags and Acquisti (2007) might be explained by the nature of personal data. The former asks for Facebook data, while the latter includes personal data such as weight and the amount of sex partners. Nevertheless, in the experiment of Beresford, Kübler, and Preibush (2012), the request of personal information to buy a DVD is not even of influence in the buying decision/process. This shows that it is hard to find a unique and quantified economic value of personal information.

Further, researchers try to explain the privacy paradox as a trade-off between the associated costs and benefits of sharing personal data, which is called the privacy calculus (Ginosar & Ariel, 2017). Ginosar and Ariel (2017) list three indicators that explain the privacy paradox: the nature of benefit, the degree of trust towards the particular website, and the degree of knowledge, or online literacy, a person possesses. These variables form the baseline of the privacy calculus. However, when quantifying the economic value of privacy or studying the privacy calculus, it is assumed that individuals are able to make a rational decision based on the benefits and costs involved with disclosing private information. From a behavioural perspective, most individuals do not behave rational at all. Hence, this paper will further explore how the actual self-disclosure can be explained by theories in line with behavioural economics.

2.2.1 Previous literature of privacy behaviour

One of the well-explained papers that studies the privacy context using a behavioural approach, is the paper of Acquisti and Grossklags (2007). They specify three theories that explain the difference between the classical rational choice theory and the actual privacy decision making of individuals: (1) incomplete information, (2) bounded rationality, and (3) behavioural anomalies and biases.

First, incomplete information, or asymmetric information, refers to the limited knowledge of the individual about which data is captured by the specific source and what it is used for, and which risks are associated when sharing private information (Acquisti & Grossklags, 2007). It is relevant to the issue of privacy behaviour for several reasons: it is unknown which data is shared, who will obtain the data, and for which purposes. The theory of incomplete information contributes to the explanation that the probabilities of risks are unknown and evaluating the benefits and costs of disclosing information are hard, or even impossible (Acquisti & Grossklags, 2007). Second, behavioural economics takes into account the bounded rationality of individuals, which refers to the inability of exhaustively searching for the best alternative (Acquisti & Grossklags, 2007). This would imply that even if all information is available to the individual, it would nevertheless take an amount of time to consider all possible alternatives rather than simply sharing the personal information. Finally, even if an individual would have access to complete information and have the cognitive ability to effectively implement it, there are still various systematic biases that differentiate the actual privacy behaviour from the rational choice theory. Few examples of such systematic biases are overconfidence, rational ignorance, reciprocity and fairness, trust, optimism, and affects. The most recognised bias within behavioural economics, and specifically within the domain of decision making, is the affect heuristic (Kokolakis, 2017). Hence, this paper will have a closer look to what has been studied on the relationship between affects and self-disclosure so far.

2.2.2 The role of affects

The reason for the focus on this specific bias is that the decision to disclose private information is often a very immediate and impulsive process. Hence, emotions of a specific individual are expected to influence the decision process significantly. Much research investigate to what extent emotions influence the economic choice of individuals in various settings. Loewenstein (2000) points out the important difference between the influences of emotions and the influence of having a preference for a specific behaviour. While preferences are consistent and stable for a short time period, emotions could change one's needs immediately as the individuals themselves experience changes in the inner bodily state and the external stimuli. Related to the online context, individuals receive much impulses and are triggered by extrinsic motivations constantly.

Considering privacy concerns, individuals face three major concerns: collection of information without notice, information shared with third parties, and use of information for unapproved or secondary objectives (Ginosar & Ariel, 2017). Based on this, the privacy concern is observed as a more general measure and not specified for a specific context. When including affects, it is necessarily to

compare the influenced decision by the affects which is the actual self-disclosure. Affects are a summative evaluations of stimuli that may determine the behaviour and decision-making of people (Yu et al., 2015). The study of Wakefield (2013) investigated simultaneously positive and negative emotions. On the positive side, Wakefield (2013) considers website enjoyment, excitement, pleasure, and satisfaction. It is expected that positive affects are positively related to the actual self-disclosure and, hence, could be an explanation for the privacy paradox. Negative affects have been studied more frequently. Previous studies have already shown the influence of anxiety on self-disclosure behaviour. Further, Jung and Park (2018) considered fear, disappointment, anger, and regret as the relevant negative affects.

Several papers already considered the role of affects when disclosing private information online. Yu et al. (2015) investigate how affects influence the degree of private information disclosed on social network services (SNS). They find an indirect impact of affects on the disclosure behaviour of individuals. The indirect effect model of Yu et al. (2015) concludes that the emotions of individuals have an impact on the cognitive evaluation of costs and benefits, which directly influences the privacy behaviour. This study has three important limitations. First, the context is limited to social networking services and hence the findings are difficult to apply to other contexts. Second, this research keeps in mind the rational trade-off analysis and assumes individuals base their decisions on the benefits and costs of disclosing information. Finally, Yu et al. (2015) limit the measured affects to positive emotions. However, as argued by Diener and Emmons (1985), both positive and negative affects are important. In their study, they show that the correlation between positive and negative emotions were relatively low. Hence, Diener and Emmons (1985) argue that positive and negative affects should be studied independently. Wakefield (2013) shows that positive affects significantly influence individuals' trust for platforms and their privacy beliefs, and that this effect is strengthened for individuals who have higher Internet privacy concerns. Hence, stimulating positive emotions of users increases the disclosure of private information, according to Wakefield (2013).

Although the summarized literature above provides a first comprehensive view of how affects influence the self-disclosure behaviour, limitations exist. This paper aims to contribute to this research domain by solving three limitations: (1) limited comparisons across domains, (2) limited acknowledgement of both positive and negative affects, and (3) limited distinction for different type of information.

First, this paper will contribute to the existing literature by comparing the influence of affects on self-disclosure across various domains. The discussion of privacy appears in various domains and for different purposes. In this paper, two domains are considered; e-commerce services and social networking services. Within e-commerce services, individuals share personal information in exchange

for small rewards such as discounts or loyalty cards. Companies highly value this personal information as it allows them to provide personal recommendations and optimize their revenue. Observing social networking services, the amount of shared personal information is very large. On platforms such as Facebook and Twitter, individuals share private information as age, addresses, education, and photos. Second, the influences of positive affects and negative affects are tested separately as suggested by Diener and Emmons (1985). They argue that positive and negative affects should be studied independently, based on their study in which they find relatively low correlation between the two. Hence, it is expected that in this data set the correlations between the positive and negative affects are relatively low. Finally, the choice of disclosing personal information also differs for the nature of information. Knijnenburg, Kobsa, and Jin (2013) find that different personal characteristics explain the choice of sharing information of either location-related or interest-related matters. Also, Benndorf and Norman (2018) find that the willingness to sell personal information is higher when personal preferences are asked anonymously compared to when contact information is required. Specifically, the type of information can be distinguished between identifiable information and profiling information (Kim & Kim, 2018). Where the first refers to information such as name, address, and age, and the latter includes information that identifies the taste and preferences of individuals. It is expected that individuals have a more averse feeling towards sharing identifiable information.

3. Research model and hypotheses

The research model in Figure 3.1 explains the possible effect of positive affects and negative affects on the actual self-disclosure of individuals. In this model, the affects of individuals have a direct influence on the privacy gap, as they will explain why actual self-disclosure deviates from the intention to disclose information. This model will contribute to answering the main question "*Can the privacy paradox be explained by the underlying emotions of individuals?*"

3.1 Existence of the privacy paradox

To answer the main research questions, several hypotheses will be tested. First, it is expected that the privacy concern is not explaining the actual self-disclosure, at least not fully. This would indicate that there is evidence for the privacy paradox to exist. Hence, this first hypothesis is as follow:

H1: The privacy concern does not have a relationship with the actual self-disclosure of individuals regarding the disclosure of each type of information on any kind of platform.

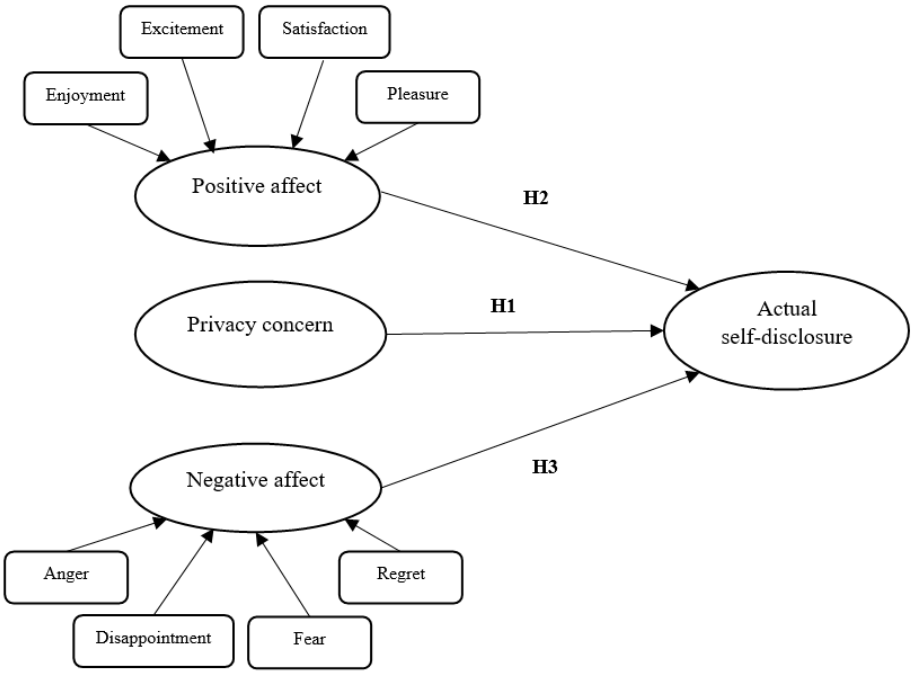


Figure 3.1 Research model

3.2 Positive affects and actual self-disclosure

Based on previous literature, it is expected that affects of individuals have an influence on the self-disclosure of private information. Emotions cause the actual behaviour of individuals to deviate from the intended behaviour, and hence they could explain the privacy paradox. First, positive affects are considered. Based on previous research, we expect that positive affects will have a positive effect on the actual self-disclosure. This leads to the following hypotheses:

H2: The positive affects regarding the disclosure of each type of information will have a positive effect on the actual self-disclosure on any kind of platform.

3.3 Negative affects and actual self-disclosure

Next, negative affects are considered. It is expected that the negative affects have a negative effect on the actual self-disclosure and, hence, decreasing the gap between the actual self-disclosure and privacy concern. This leads to the following hypotheses:

H3: The negative affects regarding the disclosure of each type of information will have a negative effect on the actual self-disclosure on any kind of platform.

3.4 Control variables

The actual self-disclosure of individuals might be influenced by other factors than affects. To control for such factors, the model includes measures for age, gender, mood, education, and frequency of use of services.

4. Methodology

4.1 Survey design

The aim of this research is to investigate to what extent positive and negative affects can explain the gap between individuals' privacy concern and their actual self-disclosure. The data is collected using a cross-sectional survey design, consisting of 44 questions, to elicit the behaviour of individuals when disclosing private information online. The survey was written in English and the average time to complete the survey is approximately 6 minutes. The design of the survey is such that the order of questions prevents any biases regarding providing identifying information such as age, education, and mood. Research shows that collecting such informative information in the beginning, might scare off individuals to reveal their truthful behaviour. At the introduction of the survey, participants are ensured anonymity and informed that the data collected will only be used for scientific purposes to increase the validity of responses. The survey was randomly spread across socials to reach a diverse group as possible and was online for 2 weeks. In the end, 167 responses were collected. After deleting the 22 incomplete responses, the sample remained with 142 respondents. Further, for gender only three respondents indicated 'other'. These outliers have been dropped, leaving 142 respondents in the sample.

4.2 Measurements

4.2.1 Affects

To measure the influence of affects on the self-disclosure of individuals, the questionnaire includes 4 statements regarding positive affects and 4 statements regarding negative affects for both the social networking sites and e-commerce services. Hence, the *generalpositiveSNS* is the average of values based on A1-A4 and *generalnegativeSNS* is the average of values based on A5-A8. The value of *generalpositiveECOM* is based on the average of the values of questions B1-B4 and the value of *generalnegativeECOM* is based on the average of the values of questions B5-B8. To account for the

fact that the nature of information might influence the emotions of individuals towards sharing personal information, the questions in part C are included. These are divided into 4 questions regarding identifiable information (C1, C3, C6, and C7) and 4 questions regarding profiling information (C2, C4, C5, and C8). For each kind of information, there are 2 positive and 2 negative statements. Therefore, the *generalpositiveIDEN* can be measured by taking the average of the values of C1 and C3 and the *generalnegativeIDEN* by taking the average of the values of C6 and C7. Similarly, by taking the average of the values of C2 and C4 the variable *generalpositivePROF* is derived and by taking the average of the values of C5 and C8 the variable *generalnegativePROF* is derived. The formulation of all the statements is based on the questionnaire used by Yu, Hu, and Cheng (2015). The following statements were presented, where the questions in each part are shown in random order:

A. The following questions are regarding the use of social networking services. Please indicate to what extent you agree with the following statements:

A1. Social networking services give me good feelings
A2. I enjoy engaging in social networking services
A3. Social networking sites are exciting
A4. I have good experiences with social networking services
A5. I am afraid when using social networking services
A6. I am disappointed when using social networking services
A7. Social networking services make me regretful
A8. I get angry from engaging in social network activities

B. The following questions are regarding the use of e-commerce services. Please indicate to what extent you agree with the following statements:

B1. E-commerce services give me good feelings
B2. I enjoy shopping online
B3. E-commerce services are exciting
B4. I have good experiences with online shopping
B5. I am afraid when using e-commerce services
B6. I am disappointed when using e-commerce services
B7. Online shopping makes me regretful
B8. I get angry from buying products online

C. The following questions are regarding sharing information online. Please indicate to what extent you agree with the following statements:

C1. The online self-disclosure of my personal contact details makes me happy
C2. When I talk about my feelings or experiences online, I get excited
C3. It enjoys me to share my own personal contact details online with others
C4. It gives me satisfaction when I talk about my feelings or experiences online
C5. I get disappointed when I am asked to disclose intimate, personal things online
C6. When I share my personal contact details online, I feel afraid
C7. I normally get angry when I am self-disclosing my personal contact details online
C8. When I express my personal preferences online, I feel regret

For all the statements, respondents were asked to agree or disagree according on a 5-Likert scale. Here, 1 = disagree, 2 = somewhat disagree, 3 = neither agree nor disagree, 4 = somewhat agree, and 5 = agree. The descriptive statistics of the general positive and negative attitudes towards the different domains are shown in Table 4.1. It can be observed that the mean for the positive affects

regarding sharing information towards specific services are relatively higher than the average positive affects regarding sharing specific kind of information. This is confirmed by the negative affect, which is relatively 2.55 for the negative affect regarding social networking services and 2.26 for the negative affect regarding e-commerce services while the negative affect regarding sharing identifiable or profiling information specifically is on average above 3.20.

Table 4.1

Descriptive statistics affects regarding sharing information

Variable	Observations	Mean	Std. Dev.	Min	Max
generalpositiveSNS	142	3.7148	0.7381	1.5	5
generalnegativeSNS	142	2.5475	0.8832	1	4.75
generalpositiveECOM	142	3.8979	0.7979	1.5	5
generalnegativeECOM	142	2.2588	0.8227	1	4.25
generalpositiveIDEN	142	1.9824	0.8638	1	5
generalnegativeIDEN	142	3.1972	0.9471	1	5
generalpositivePROF	142	2.3415	1.0200	1	5
generalnegativePROF	142	3.2746	0.8764	1	5

Using the Cronbach's alpha, it can be shown whether the items are quite related to show the validity of the latent variables. The Cronbach's alpha for the items that are used to calculate the general affects measurements *generalpositiveSNS*, *generalpositiveECOM*, *generalnegativeSNS*, and *generalnegativeECOM* are between 0.70 and 0.81 respectively. Similar result is found for the negative affects towards the different kinds of services and on different types of information. Hence, as the Cronbach's alphas are above the recommended 0.7, it can be concluded that the items are quite related to each other.

4.2.2 General privacy concern

The general privacy concern is the benchmark which we can compare with the actual self-disclosure to observe whether a privacy gap exists. The questions are derived from Jung and Park (2018). The setup of the questions allows us to measure the concern regarding the *collection of information*, *improper access*, *internal secondary use*, and *external secondary use*. This privacy concern is a general measure of feelings towards sharing information online without putting it in a specific context. The following statements were presented, where the respondents could answer according to the 5-Likert scale with 1 = disagree, 2 = somewhat disagree, 3 = neither agree nor disagree, 4 = somewhat agree, and 5 = agree.

D. The following questions are about sharing personal information online in general. Please indicate to what extent you agree with the following statements:

D1. The collection of my personal information causes my concern
D2. I am concerned about hacking
D3. It does bother me that companies can use my personal information to send promotional emails to me without my consent
D4. I worry about the possibility that the company will sell my information to other companies

The descriptive statistics of the privacy concern are shown in Table 4.2. Important note is that the third statement (D3) is negatively formulated, however recoded such that a high value (i.e. 5) indicates a high concern and is in line with the direction of the other statements. On average, the respondents agree to the statements and show that they are concerned about sharing their private information online in general. Respondents are most concerned about the possibility of being hacked (mean = 4.18) and least concerned about their data being collected (mean = 3.98). Based on the 4 statements in part D, we create a variable for the general privacy concern. This variable *privacyconcern* is the average of the variables *collection*, *access*, *internaluse*, and *externaluse*.

Table 4.2

Descriptive statistics privacy concern

Variable	Observations	Mean	Std. Dev.	Min	Max
collection	142	3.9789	0.9710	1	5
access	142	4.1761	0.9094	1	5
internaluse	142	3.9859	1.2991	1	5
externaluse	142	4.0211	1.0816	1	5
privacyconcern	142	4.0405	0.7630	1.25	5

4.2.3 Actual self-disclosure

The actual self-disclosure is measured by the self-reported behaviour of the respondents. Here, the questions are based on the study of Hallam and Zanella (2017) and the study of Yu et al. (2015). The 6 questions are adjusted in such a way that the disclosing behaviour for different kind of information (identifying and profiling) and different kind of services (social networking services and e-commerce services) can be observed. Participants are asked to agree or disagree with the statements on a 5 point Likert scale. For all questions, from a high score (i.e. close to 5) there can be derived that the individual discloses a high amount of information online. The following statements are presented:

E. The following questions are about your online sharing behaviour. Please indicate to which extent you agree with the following statements:

E1. I share personal information like age, home address, and city on social networking sites
E2. My personal thoughts, feelings, and experiences I openly share on social networking sites
E3. From my online profile, it would be easy to get access to my personal contact details
E4. I provide personal information like email address, age, and birth date to e-commerce websites

E5. *E-commerce websites can give me customized recommendations based on my preferences I have revealed online*
E6. *I do openly share my political preferences online*

The descriptive statistics of the actual self-disclosure measurements are presented in Table 4.3. The variable *disclosureSNS* is the average of the two questions E1 and E2. Similar, *disclosureECOM* is based on the two questions E4 and E5 by taking the average. The variables *disclosureIDEN* and *disclosurePROF* are each based on the average of three questions, where the first is based on E1, E3, and E4, and the latter is based on E2, E5, and E6. By summing up these four variables and dividing by four, the variable *actualdisclosure* is elicited. From Table 4.3, it is observed that the highest degree of private information enclosed is for e-commerce services (mean = 3.67), while there is a relatively low actual self-disclosure on social networking services (mean = 2.48). For the specific types of information disclosed, the average actual self-disclosure for identifiable information is slightly higher (mean = 2.98) than the average self.

Table 4.3

Descriptive statistics actual self-disclosure

Variable	Observations	Mean	Std. Dev.	Min	Max
disclosureSNS	142	2.4754	0.9881	1	5
disclosureECOM	142	3.6725	0.9930	1	5
disclosureIDEN	142	2.9812	0.9891	1	5
disclosurePROF	142	2.5235	0.7357	1	5
actualdisclosure	142	2.9131	0.7494	1	4.46

From a privacy paradox perspective, as the means of *privacyconcern* were relatively high (close to 4, see Table 4.2) you would expect relatively low values for the actual disclosure if individuals would behave according to their intentions. However, the means of the actual self-disclosure are on average around 3 and, hence, it would suggest there exists some privacy gap. The privacy gap is the difference observed between the privacy concern of an individual and how much an individual actually discloses. This is summarized by the variable *privacygap* which is the *actualdisclosure* minus the *privacyconcern*. A positive value for the privacy gap measure indicates that there exists a privacy gap for the specific individual. The higher the value of the privacy gap, the larger the difference between the concern and actual disclosing behaviour of an individual. The *privacygap* is presented in Table 4.4 and shows an average gap of 0.95. For all the specific domains, the privacy gap is measured similarly as *privacygap*. For example, *privacygapSNS* is measured by *disclosureSNS* minus *privacyconcern*. As privacy concern is a general variable and not influenced by a specific domain, it is used to measure all privacy gaps. From Table 4.4, we observe that the privacy gap is highest on average for e-commerce services (mean = 1.71) and lowest on average for social networking services (mean = 1.51). For the items that determine

the actual self-disclosure, the Cronbach's alpha is sufficient with a scale reliability coefficient of 0.82. Solely for the four items that determine privacy concern, the coefficient is below the recommend 0.7 (0.67), however, this is not considered to be problematic.

Table 4.4

Descriptive statistics privacy gap

Variable	Observations	Mean	Std. Dev.	Min	Max
privacygap	142	0.9536	1.0060	-1.625	2.9583
privacygapSNS	142	0.5158451	1.207326	-2.5	3.5
privacygapECOM	142	1.713028	1.177111	-1.25	4
privacygapIDEN	142	1.021714	1.188734	-1.75	3.75
privacygapPROF	142	0.5639671	1.207326	-2.083333	3.5

4.2.4 Control variables

At the end of the survey, respondents are asked to answer questions regarding their self-disclosure behaviour online. The following questions are presented:

F1. How much time do you spent on social networking services on average?
F2. On which of the following social networking services do you have a personal account?
F3. How frequently do you buy products online?
F4. On which of the following e-commerce services have you ever bought a product?
F5. What kind of information do you openly share online?

The first question is answered according to hours spent on social networking sites on average per day, where 1 = less than 1 hour a day, 2 = 1 to 2 hours a day, 3 = 3 to 4 hours a day, 4 = 4 to 5 hours a day, and 5 = more than 5 hours a day. From the second question, it can be derived how active respondents are on social networking sites by the summation of how many accounts they possess of the top 5 social networking services, which are Facebook, YouTube, Instagram, LinkedIn, and WhatsApp, in random order (Oosterveer, 2019). Similar questions are asked for e-commerce services, where the use is measured according to frequencies of online buying per month: 1 = less than once a month, 2 = once a month, 3 = twice a month, 4 = once a week, and 5 = more than once a week. Further, familiarity with e-commerce services is measured by the summation of whether the respondents has ever bought a product at the top 5 Dutch e-commerce companies, which are Bol.com, Wehkamp, Coolblue, Albert Heijn Online, and Zalando (de Weerd, 2018). This gives an indication of the familiarity of a person with the services. Finally, it is asked what kind of specific information they have shared online which is very specific and not adjusted towards a specific service. This is summarized by the variable *informationonline* which counts how many items a person has online based on the nine given types of information: (1) first name, (2) last name, (3) birth date, (4) city, (5) email address, (6) phone number, (7) political preference, (8) sexual partners, and (9) liking preference a person has online. The descriptive statistics of the self-disclosure behaviour are shown in Table 4.5.

Table 4.5

Descriptive statistics self-disclosure behaviour

Variable	Observations	Mean	Std. Dev.	Min	Max
activeSNS	142	3.6972	1.3315	1	5
activeECOM	142	2.2042	1.3238	1	5
informationonline	142	4.3310	1.7289	1	9

On average, respondents are familiar with buying products on 2 of the 5 listed companies (mean = 2.20). Further, respondents have on average 4 of the 9 listed details provided online, however the standard deviation is relatively high (1.73). Figure 4.1 shows that most individuals use social networking services 1 to 2 hours a day (33.1 percent) or 3 to 4 hours a day (41.55 percent). For e-commerce services, most respondents buy between less than once a month or twice a month products online.

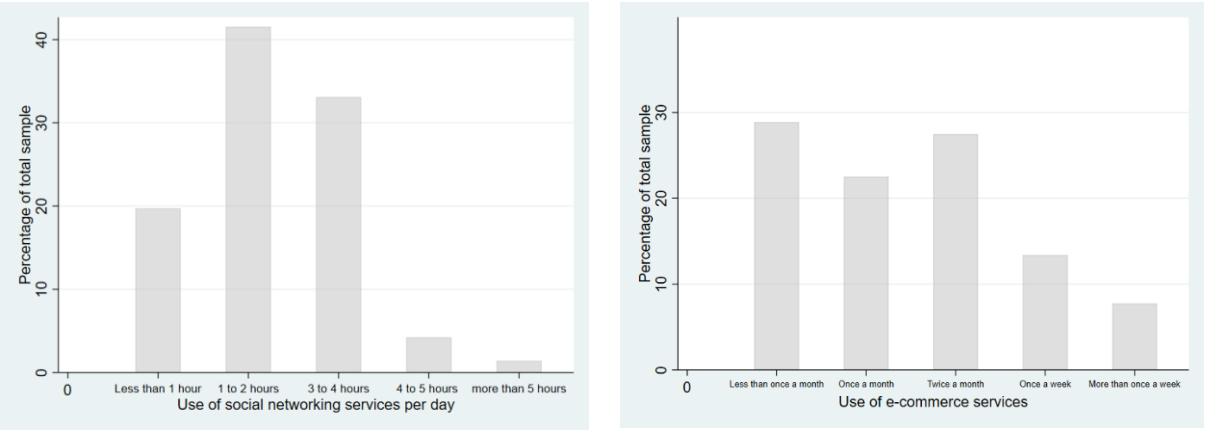


Figure 4.1 Distribution of use of the different types of platforms, social networking services and e-commerce services.

Finally, the following questions are presented to be able to control for demographic characteristics of the respondents:

G1. *What is your age?*
G2. *Wat is your gender?*
G3. *What is your country of origin?*
G4. *Please indicate the highest level of education that you have completed.*
G5. *What is your current mood?*

From the above questions, the first and third questions were open. Country has been transformed to a dummy variable for whether respondents are Dutch (*dutch* = 1) or not (*dutch* = 0). For gender, respondents could indicate whether they were (1) male, (2) female, or (3) other. For the respondents that indicated 'other', the answers have been removed and the variable has been transformed to a dummy variable indicating whether the respondent is a male (*male* = 1) or female (*male* = 0).

Regarding the highest level of education obtained, the values indicate 1 = high school, 2 = MBO, 3 = bachelor, 4 = master, 5 = PhD, and 6 = other. Note, MBO is Dutch for secondary vocational education. Finally, the mood of the respondent is indicated by 1 = very bad, 2 = bad, 3 = neither good nor bad, 4 = good, and 5 = very good. None of the respondents indicated to have a very bad mood, hence, the values for mood vary from 2 to 5. The descriptive statistics of the demographic control variables are shown in Table 4.6. The average age of the sample is close to 29 years and 27.46 of the respondents are male. Furthermore, more than half of the respondents is Dutch from origin (57.04 percent). Almost half of the respondents' highest degree obtained is a bachelor (47.89 percent) and only 13.38 percent obtained only a high school or MBO-degree. It should not be neglected that only 1 respondent obtained a PhD (0.7 percent). Finally, the mood of the respondents was relatively good (59.15 percent).

Table 4.6

Descriptive statistics demographic characteristics

Variable	Observations	Mean	Std. Dev.	Min	Max
age	142	28.9296	11.2248	16	71
dutch	142	0.5704	0.4968	0	1
education					
(*base high school*)					
MBO	142	0.0563	0.2314	0	1
Bachelor	142	0.4789	0.5013	0	1
Master	142	0.3592	0.4815	0	1
PhD	142	0.0070	0.0839	0	1
Other	142	0.0211	0.1443	0	1
mood					
(*base bad*)					
neither good nor bad	142	0.2183	0.4146	0	1
good	142	0.5915	0.4933	0	1
very good	142	0.1690	0.3761	0	1
male	142	0.2746	0.4479	0	1

5. Analysis

For the analysis of the data obtained from the survey, a parametric test will be used as it fits best for the dependent variable, which is treated as a continuous variable. The hypotheses will be tested using a multiple regression model. This model is powerful for linear relationships and fits best as the dependent variable *actualdisclosure* is a continuous variable. The models for testing the hypotheses is specified below. First, it is measured whether the privacy concern is related to the actual disclosure, as specified by the simple regression model below.

H1.1: $actualdisclosure = \beta_0 + \beta_1 privacyconcern + \beta_2 Z + \mu$
H1.2: $disclosureSNS = \beta_0 + \beta_1 privacyconcern + \beta_2 Z + \mu$
H1.3: $disclosureECOM = \beta_0 + \beta_1 privacyconcern + \beta_2 Z + \mu$
H1.4: $disclosureIDEN = \beta_0 + \beta_1 privacyconcern + \beta_2 Z + \mu$
H1.5: $disclosurePROF = \beta_0 + \beta_1 privacyconcern + \beta_2 Z + \mu$

where Z indicates the control variables and μ the error term. To test whether there is a difference for different types of platform or different kind of information, the dependent variable varies from actual self-disclosure on social networking sites to the actual self-disclosure of a specific type of information.

The second hypothesis tests whether there is a relationship between positive affects and the actual self-disclosure. The model for testing this hypothesis is specified by the following equation:

H2.1: $actualdisclosure = \beta_0 + \beta_1 privacyconcern + \beta_2 generalpositive + \beta_2 Z + \mu$
H2.2: $disclosureSNS = \beta_0 + \beta_1 privacyconcern + \beta_2 generalpositiveSNS + \beta_2 Z + \mu$
H2.3: $disclosureECOM = \beta_0 + \beta_1 privacyconcern + \beta_2 generalpositiveECOM + \beta_2 Z + \mu$
H2.4: $disclosureIDEN = \beta_0 + \beta_1 privacyconcern + \beta_2 generalpositiveIDEN + \beta_2 Z + \mu$
H2.5: $disclosurePROF = \beta_0 + \beta_1 privacyconcern + \beta_2 generalpositivePROF + \beta_2 Z + \mu$

where Z indicates the control variables added and μ the error term. The independent variable for positive affects changes to allow for testing the difference among different types of platforms and different kinds of information.

Similar, for the third hypothesis the model includes negative affects at the independent variable to measure the relationship between negative affects and the actual self-disclosure. The following equation summarizes this model:

H3.1: $actualdisclosure = \beta_0 + \beta_1 privacyconcern + \beta_2 generalnegative + \beta_2 Z + \mu$

H3.2: $disclosureSNS = \beta_0 + \beta_1 privacyconcern + \beta_2 generalnegativeSNS + \beta_2 Z + \mu$

H3.3: $disclosureECOM = \beta_0 + \beta_1 privacyconcern + \beta_2 generalnegativeECOM + \beta_2 Z + \mu$

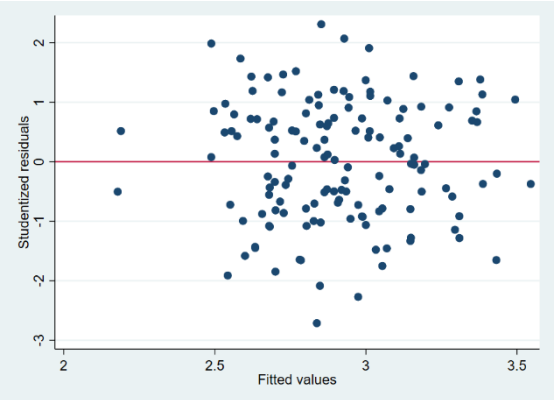
H3.4: $disclosureIDEN = \beta_0 + \beta_1 privacyconcern + \beta_2 generalnegativeIDEN + \beta_2 Z + \mu$

H3.5: $disclosurePROF = \beta_0 + \beta_1 privacyconcern + \beta_2 generalnegativePROF + \beta_2 Z + \mu$

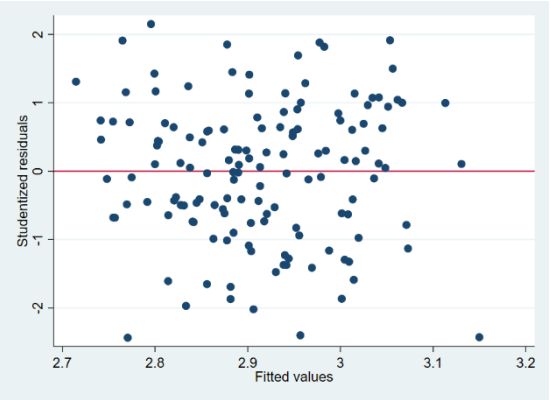
where Z indicates the control variables added and μ the error term. Again, to measure negative affects for different platforms and different types of information the independent variable and dependent variable are specified for each case.

5.1 Validity of the model

The assumptions for the multiple regression model are tested to check whether they are not violated. First, the assumption of no collinearity holds as no correlation higher than 0.5175 has been found among the dependent variables. To confirm this finding, the Variance Inflation Factor (VIF) shows values around 1.24 which are much lower than the suggested level of 10, indicating that there is no evidence for multicollinearity among the variables. Further, the sum of residuals should equal zero and show a random distribution. In order to evaluate this assumption, the studentized residuals are plotted in Figure 5.1. The scatter plot shows a random distribution for both the fitted values of actual disclosure on the x-axis plotted against the studentized residuals on the y-axis. The random distribution of residuals does not present a sign of non-constant variation or a non-linear relationship among the residuals.



The fitted values of the actual disclosure related to the positive affects x-axis against the studentized residuals on the y-axis



The fitted values of the actual disclosure related to the negative affects x-axis against the studentized residuals on the y-axis

Figure 5.1 Plotting predicted residuals of actualdisclosure

Next, the assumption of normality is tested. The skewness test indicates a value of -0.14 (p = 0.4654) for positive affects and -0.22 (p = 0.2649) for negative affects, hence no substantial departure from normality is found. Observing the Kurtosis test, the values equal 2.38 (p = 0.0520) for positive affects and 2.50 (p = 0.1658) for negative affects respectively. Hence it can be assumed that there is no real violation of normality in this data. Finally, the assumption of homoscedasticity is tested using the Breusch-Pagan test. The results show a p-value of 0.4512 for positive affects and 0.3733 for negative affects, and hence no evidence for heteroskedasticity is found. This indicates that the constant variance assumption is not violated. In conclusion, the multiple regression model has a good fit with the data used in this research.

5.2 Results

Table 5.1 summarizes the results of the first hypothesis related to the relationship between the privacy concern of individuals and their actual self-disclosure regarding each type of information on any kind of platform. The first column represents the regression where we estimate the relationship between the privacy concern and the actual self-disclosure. The coefficient of *privacyconcern* is negative as expected, however, relatively low and insignificant. In the columns 2 to 5, the model considers the relationship between privacy concern and the self-disclosure on specific types of platforms (column 2 and 3) and of specific types of information (column 4 and 5). Here, the coefficient of *privacyconcern* is still insignificant. The coefficient for *informationonline* is in all columns positive and significant at the 1 percent significance level. It shows evidence for a positive relationship between the amount of items revealed online in general and the actual self-disclosure of an individual. Further, for an increase in age there is a decrease in the actual self-disclosure on any kind of platform for any type of information, holding other factors constant. The models estimating the relationship between privacy concern and the actual self-disclosure on social networking services and self-disclosure of profiling information (column 2 and 5) have a relatively low R-squared, 0.189 and 0.175 respectively. Within other models regarding the actual self-disclosure on e-commerce services and identifiable information, the privacy concern explains more than 33 percent of the variance in the actual disclosure of respondents. The model in the first column has the highest R-squared and explains 40.6 percent of the variance in the actual disclosure of the respondents

Table 5.1

Results relationship between actualdisclosure and privacy concern regarding each type of information on any kind of platform.

	(1)	(2)	(3)	(4)	(5)
VARIABLES	actualdisclosure	disclosureSNS	disclosureECOM	disclosureIDEN	disclosurePROF
privacyconcern	-0.0496	-0.0340	-0.0313	-0.0141	-0.0887
	(0.0680)	(0.117)	(0.0922)	(0.0873)	(0.0894)
informationonline	0.166***	0.113**	0.227***	0.247***	0.100***
	(0.0303)	(0.0523)	(0.0426)	(0.0383)	(0.0347)
male	0.246*	0.267	0.0583	0.151	0.231
	(0.140)	(0.211)	(0.170)	(0.183)	(0.169)
age	-0.0203***	-0.0187**	-0.0265***	-0.0275***	-0.0129**
	(0.0059)	(0.0093)	(0.0065)	(0.0069)	(0.0061)
dutch	0.0909	0.115	-0.123	0.266	-0.160
	(0.134)	(0.198)	(0.176)	(0.171)	(0.152)
Constant	2.805***	2.137**	3.779***	2.753***	3.014***
	(0.584)	(0.858)	(0.700)	(0.775)	(0.497)
Observations	142	142	142	142	142
R-squared	0.406	0.189	0.338	0.339	0.175

Additional control variables included in the model are useSNS, useECOM, education, and mood.

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

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The results of the testing for the second hypothesis are reported in Table 5.2. The first column presents the regression for the relationship between positive affects and the actual self-disclosure in general. It shows that there is a significant positive relationship between the positive affects toward and the actual self-disclosure of individuals ($\beta = 0.384$). For the positive affect toward sharing information on social networking services, the coefficient is positive and significant at the 10 percent significance level ($\beta = 0.238$). When measuring the effect of positive affects on the actual self-disclosure in the domain of e-commerce services in the third column, results show a positive coefficient which is significant at the 10 percent significance level ($\beta = 0.189$). Further, the magnitude of the effect of positive affects on the actual self-disclosure increases for the disclosure behaviour regarding different types of information. The coefficient for *disclosureIDEN* equals 0.272 and for *disclosurePROF* equals 0.352, both significant at the 1 percent significance level. For all specified models in Table 5.2, there is no evidence found of an effect of privacy concern on the actual self-disclosure as none of the coefficient is significant at the 10 percent significance level. Regarding the general model in column 1, the positive coefficient for male ($\beta = 0.270$) indicates a higher actual self-disclosure for males compared to females, holding all other factors constant. This result is significant at the 5 percent significance level. For an increase in age, the actual self-disclosure decreases on any type of platform or for any type of information. This results is significant at the 1 percent significance level.

Table 5.2

Results relationship between positive affects and actual self-disclosure regarding each type of information on any kind of platform.

	(1)	(2)	(3)	(4)	(5)
VARIABLES	actualdisclosure	disclosureSNS	disclosureECOM	disclosureIDEN	disclosurePROF
privacyconcern	0.00488	-0.0120	-0.00206	0.0701	-0.0932
	(0.0711)	(0.118)	(0.0923)	(0.0905)	(0.0780)
generalpositive	0.384***				
	(0.104)				
generalpositiveSNS		0.238*			
		(0.127)			
generalpositiveECOM			0.189*		
			(0.107)		
generalpositiveIDEN				0.272***	
				(0.0951)	
generalpositivePROF					0.352***
					(0.0588)
informationonline	0.186***	0.121**	0.229***	0.273***	0.107***
	(0.0309)	(0.0515)	(0.0432)	(0.0381)	(0.0316)
male	0.270**	0.319	0.0818	0.203	0.225
	(0.131)	(0.212)	(0.170)	(0.170)	(0.139)
age	-0.0203***	-0.0163*	-0.0261***	-0.0278***	-0.0135***
	(0.0054)	(0.0087)	(0.0069)	(0.0066)	(0.0049)
dutch	0.1131	0.113	-0.0990	0.228	-0.0073
	(0.129)	(0.195)	(0.177)	(0.170)	(0.133)
Constant	1.457**	1.096	3.097***	1.676*	1.985***
	(0.681)	(1.013)	(0.781)	(0.866)	(0.504)
Observations	142	142	142	142	142
R-squared	0.474	0.214	0.356	0.386	0.375

Additional control variables included in the model are useSNS, useECOM, education, and mood.

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 5.3 reports the results of the third hypothesis. Here, the model specifies the relationship between negative affects and actual self-disclosure regarding each type of information on any kind of platforms. Similar to the previous model, there is no evidence found of an effect of privacy concern on the actual self-disclosure of individuals. In Table 5.3, there is only a significant effect of negative affects found regarding the self-disclosure on social networking sites. The coefficient for *generalnegativeSNS* equals 0.211 and is significant at the 5 percent significance level. Regarding the effect of age, there is again a negative impact of age on the actual self-disclosure found. This result is significant at the 1 percent significance level in all models except for column 2, where the coefficient is significant at the 5 percent significance level.

Table 5.3

Results relationship between negative affects and actual self- regarding each type of information on any kind of platform.

	(1)	(2)	(3)	(4)	(5)
VARIABLES	actualdisclosure	disclosureSNS	disclosureECOM	disclosureIDEN	disclosurePROF
privacyconcern	-0.0909	-0.0907	-0.00940	-0.0200	-0.105
	(0.0759)	(0.117)	(0.0933)	(0.0970)	(0.0947)
generalnegative	0.146				
	(0.104)				
generalnegativeSNS		0.211**			
		(0.104)			
generalnegativeECOM			-0.0888		
			(0.104)		
generalnegativeIDEN				0.0147	
				(0.0877)	
generalnegativePROF					0.0502
					(0.0725)
informationonline	0.162***	0.0967*	0.229***	0.246***	0.102***
	(0.0304)	(0.0520)	(0.0428)	(0.0391)	(0.0348)
male	0.253*	0.255	0.0276	0.152	0.228
	(0.139)	(0.206)	(0.1767)	(0.184)	(0.169)
age	-0.0210***	-0.0202**	-0.0261***	-0.0276***	-0.0130**
	(0.0059)	(0.0092)	(0.0066)	(0.0070)	(0.0061)
dutch	0.0816	0.101	-0.134	0.266	-0.177
	(0.131)	(0.194)	(0.175)	(0.171)	(0.149)
Constant	2.645***	2.058**	3.915***	2.748***	2.920***
	(0.614)	(0.914)	(0.719)	(0.779)	(0.519)
Observations	142	142	142	142	142
R-squared	0.416	0.216	0.342	0.339	0.179

Additional control variables included in the model are useSNS, useECOM, education, and mood.

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Finally, as the main interest of this paper is to investigate how affects influence the actual self-disclosure to be higher than the privacy concern, we reconsider the second and third hypothesis limited to observations for which there is a positive privacy gap. The results of these models are specified in Table 5.4 and Table 5.5.

From Table 5.4 we observe that the coefficients for positive affects towards actual self-disclosure regarding each type of information on any kind of platform are still positive and significant at the 10 percent significance level. The main difference compared to previous estimated models is the effect of privacy concern on the actual self-disclosure for social networking services and profiling

information. Both coefficients are significant at the 1 percent significance level and provide evidence for a negative effect of privacy concern on the actual self-disclosure. According to Table 5.5 there is no evidence found of the effect of negative affects on the actual self-disclosure. For all domains except e-commerce services, there is evidence for a negative relationship between the privacy concern and the actual self-disclosures. These results are significant at the 5 percent significance level.

Table 5.4

Results relationship between positive affects and actual self-disclosure regarding each type of information on any kind of platform for observations with a privacy gap ≥ 0

	(1)	(2)	(3)	(4)	(5)
VARIABLES	actualdisclosure	disclosureSNS	disclosureECOM	disclosureIDEN	disclosurePROF
privacyconcern	-0.133	-0.642***	-0.123	-0.251	-0.399***
	(0.108)	(0.134)	(0.0972)	(0.154)	(0.104)
generalpositive	0.345***				
	(0.101)				
generalpositiveSNS		0.228*			
		(0.126)			
generalpositiveECOM			0.189*		
			(0.0961)		
generalpositiveIDEN				0.244**	
				(0.0969)	
generalpositivePROF					0.289***
					(0.0694)
informationonline	0.157***	0.0820*	0.195***	0.214***	0.0946***
	(0.0302)	(0.0454)	(0.0429)	(0.0410)	(0.0305)
male	0.308**	0.206	0.0587	0.253	0.278*
	(0.133)	(0.201)	(0.157)	(0.173)	(0.152)
age	-0.0152***	-0.0182**	-0.0213***	-0.0228***	-0.00712
	(0.00572)	(0.00823)	(0.00634)	(0.00798)	(0.00563)
dutch	0.0954	-0.146	-0.153	0.133	0.0105
	(0.142)	(0.189)	(0.157)	(0.187)	(0.150)
Constant	2.199***	4.618***	3.908***	3.066***	3.332***
	(0.796)	(0.956)	(0.779)	(0.983)	(0.631)
Observations	121	100	132	112	107
R-squared	0.473	0.446	0.371	0.383	0.443

Additional control variables included in the model are useSNS, useECOM, education, and mood.

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 5.5
Results relationship between negative affects and actual self-disclosure regarding each type of information on any kind of platform for observations with a privacy gap ≥ 0

	(1)	(2)	(3)	(4)	(5)
VARIABLES	actualdisclosure	disclosureSNS	disclosureECOM	disclosureIDEN	disclosurePROF
privacyconcern	-0.241**	-0.678***	-0.124	-0.345**	-0.516***
	(0.111)	(0.140)	(0.0983)	(0.160)	(0.106)
generalnegative	0.0571				
	(0.114)				
generalnegativeSNS		0.0667			
		(0.0922)			
generalnegativeECOM			-0.107		
			(0.0976)		
generalnegativeIDEN				-0.0717	
				(0.112)	
generalnegativePROF					0.0138
					(0.0751)
informationonline	0.141***	0.0843*	0.197***	0.187***	0.0884***
	(0.0301)	(0.0461)	(0.0424)	(0.0416)	(0.0324)
male	0.286**	0.235	-0.00373	0.212	0.254
	(0.142)	(0.205)	(0.155)	(0.194)	(0.180)
age	-0.0154**	-0.0235***	-0.0216***	-0.0212**	-0.00476
	(0.00647)	(0.00890)	(0.00607)	(0.00870)	(0.00663)
dutch	0.00982	-0.163	-0.203	0.148	-0.173
	(0.141)	(0.191)	(0.159)	(0.192)	(0.147)
Constant	3.532***	5.601***	4.744***	4.277***	4.631***
	(0.699)	(0.807)	(0.727)	(0.871)	(0.618)
Observations	121	100	132	112	107
R-squared	0.416	0.423	0.358	0.347	0.304

Additional control variables included in the model are useSNS, useECOM, education, and mood.

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

6. Discussion

The aim of this paper was to investigate how affects might explain the existence of the privacy paradox. The actual self-disclosure has been defined according to self-reported behaviour of respondents. Further, their privacy concern was measured based on general statements regarding their privacy. First of all, the very low correlation between the actual self-disclosure and privacy concern showed that individuals' concern do not predict their actual behaviour. This is consistent with findings of previous papers that show that the privacy paradox exists. Therefore, we can conclude that there is evidence for the first hypothesis and the privacy paradox exists.

Hence there are some other factors that need to explain the actual self-disclosure of individuals rather than the privacy concern. The main focus of this paper was how affects could be a possible explanation for this phenomenon. To begin with, the disclosure of personal information online is often a very impulsive behaviour. Therefore, it is suggested that emotions might influence the actual self-disclosure of an individual to deviate from his or her privacy concerns. In the results section it showed that overall positive affects are positively related to the actual self-disclosure for each type of information on any kind of platform. This would indicate that during the process of providing information online, individuals experience various stimuli that guide their behaviour rather than their concern about what could happen with their data. The magnitude of the effect of positive affects on actual self-disclosure is slightly different among platforms and types of information. There is a relatively higher magnitude for positive affects related to profiling information rather than identifiable information. In other words, positive emotions triggered on websites have a relatively higher effect on the actual self-disclosure if profiling information is requested than when identifiable information is requested. When distinguishing between social networking services and e-commerce services, positive affects have a higher impact on the actual self-disclosure on the first compared to the latter. However, it should be noted that the difference should be interpreted carefully as the dependent variable is treated as a continuous variable, although it is not a perfect one.

On the other side of positive affects are negative affects, which are expected to have a negative relationship with the actual self-disclosure. The signs of the coefficients of negative affects towards the different platforms and kinds of information are inconsistent. However there is a significant effect of negative affects found when analysing the actual self-disclosure on social networking services. This would suggest that even though an individual experiences more negatively affects towards sharing private information on social networking sites, they nevertheless share more personal information. More precisely, if negative affects increase for an individual, the actual self-disclosure increases on social networking sites. This is strong evidence for the privacy paradox to exist. However, as the most results are insignificant, it also indicates that negative affects are not very reliable measures for the actual self-disclosure. It is interesting that while often negative affects are experienced more heavily and can be recalled more easily, the results do not show a relationship between negative affects and actual-disclosure while it is possible to show an effect of positive affects on actual self-disclosure.

Finally as the main interest of this paper is to investigate whether emotions can explain the privacy paradox, we take a closer look at the model that measures the relationship between affects and actual self-disclosure for observations that have a positive privacy gap only. In other words, we limit the model to those whose actual self-disclosure is higher than their privacy concern. Considering these results reported in Table 5.4 and Table 5.5, a similar conclusion can be made that positive affects impact the actual self-disclosure while negative affects do not. Moreover, from these results it shows that the

privacy concern has a significant effect on the actual self-disclosure in some domains. Specifically, when considering the results of the model analysing the effect of negative affects on actual self-disclosure across domains, there is a negative relationship found between the privacy concern and actual self-disclosure for social networking sites, identifiable information and profiling information. From this, it can be concluded that the privacy concern plays a role when disclosing private information online. For the model including positive affects, there is only a significant effect of privacy concern on the actual self-disclosure found for disclosure on social networking sites and for profiling information.

6.1 Limitations

Three important limitations concerning the research approach used for this paper exist. First, the actual self-disclosure is the self-reported behaviour of individuals rather than actual behaviour observed. It is difficult to measure the true feelings of individuals based on the self-reported survey, however it might still be useful to provide a direction for future research. Second, the sample size is not very representative for the whole population. Specifically, the number of respondents is limited to 142 and the distribution of man and female is much skewed (only 27% of the sample is man). Further, many different nationalities are included in the sample as only 54% is Dutch, which makes it hard to account for cross-cultural differences. Finally, the measure for the actual self-disclosure is not specifically a categorical variable, as it is the summation of the different affects, however, it is not a perfect continuous variable either. The magnitude of the actual self-disclosure is not explaining a specific amount of units of information disclosed. Hence, the results will only present some insights about the signs and relationships existing between the actual self-disclosure and affects.

7. Conclusion

Whether the privacy paradox can be explained by the underlying emotions of an individual is still a debate. However, this research provides a good direction for future research where to focus on. The results show that positive affects play an important role when determining the actual self-disclosure of individuals. Interesting is that for negative affects, no evidence is found that it will impact the actual self-disclosure apart from the positive effect on actual self-disclosure on social networking services.

The main interest of this paper was to investigate whether the affects of individuals could explain the privacy paradox. The aim of this paper was to answer three questions: (1) whether the privacy paradox exist, (2) how positive and negative affects have an effect on actual self-disclosure, and (3) whether positive and negative affects differ across the various domains. The first answer is relatively clear as there is strong support in this paper for the privacy paradox to exist. Hence, future research should take into account that in most cases the privacy concern of an individual is not representative for the actual intention to disclose information. Second, positive and negative affects

differ in terms of effect on the actual self-disclosure. While there is strong evidence for positive affects to increase the actual self-disclosure, there is a lack of evidence to conclude this for negative affects. This is a very interesting results as it is often mentioned that negative emotions are more easily to recall than positive emotions. Therefore, this result provides directions for future research to unravel which emotions in specific play an important role and how they can be stimulated. Finally, the main distinction of this paper to previous literature is the analysis regarding several domains. It shows that the magnitude of positive affects differ across both the types of information shared and the types of platforms used. Although in this paper the magnitude is hard to interpret due to weak measurements, some first evidence is found that individuals' disclosure is determinant by whether they have to disclose identifiable or profiling information and whether it is for shopping or social purposes.

Based on this research, there are three recommendations for future research. First, empirical research could contribute by allowing for actual observed behaviour rather than self-reported behaviour. It would allow to identify more reliable affects that might be experienced when observing the behaviour. Apart from that, the individuals' actual self-disclosure is observed rather than reported via the survey used in this research. Second, as this research aims to provide a more generic overview across various kinds of platforms and types of information, the measurements are based on limited questions (i.e. two to three items). Hence, it would be relevant for future research to focus on a specific platform to consider the affects towards different types of information or vice versa. This would allow for more specific results for government, businesses, or policy makers and provide guidance on how to stimulate the disclosure of different types of information. Finally, future research could take into account the role of privacy concern when no positive affects exist. If there are only negative affects derived from self-disclosure does an individual trust on its privacy concern? Or is it the case that when positive affects are not stimulated it is less attractive to share information, and hence there are no actual incentives for the individual?

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