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Information Privacy in Online Social Networks: Uses and Gratification perspective

1. Introduction

Social networking in the online sphere has become ubiquitous and part of many users' daily life. Statistics from Facebook, for example, indicate that the social networking website had an average of 1.37 billion daily active users in September 2017 (Facebook, 2018). One of the unintended consequences of using OSN is the threat to information privacy such as: "unwanted contact and harassment, vulnerability to stalkers or pedophiles, use of private data by a third party, hacking, and identity theft" (Wilson, Gosling, & Graham, 2012, p. 212). Becoming a victim of cyber-bullying is also a potential repercussion of information privacy violation in OSN settings. Being cyber-bullied through OSN, especially for adolescents, can be very distressing and can lead to social isolation and even suicide (Hood & Duffy 2017; Ochoa et al. 2011).

The findings from a study by Fogel & Nehmad (2009) suggested that OSN users generally exhibit higher risk-taking attitudes (providing personal information such as phone numbers and home addresses) in comparison to individuals who do not use OSN. Acquisti & Gross (2006) discovered that non-Facebook users had higher than average privacy concerns. Moreover, it is believed that disclosing personal information is more frequent in OSN compared to offline communications (Nguyen, Bin, & Campbell, 2011). It can, therefore, be assumed that users' privacy attitude in OSN is related to the motives for or the gratifications they obtain from using OSN.

The impact of OSN gratification/motives on a variety of subjects such as religiosity (Nyland & Near, 2007), unwillingness to communicate in real life (Sheldon, 2008a), offline political and civic participation (Park, Kee, & Valenzuela, 2009), OSN addiction (Masur, Reinecke, Ziegele, & Quiring, 2014; Sofiah, Zobidah, Bolong, & Nizam, 2011), social capital (Papacharissi & Mendelson, 2011), continuance of intention to use OSN (Chiu & Huang, 2015; Ku, Chen, & Zhang, 2013; Hsu, Tien, Lin, & Chang, 2015; Oliveira & Huertas, 2015), has been examined. However, the effect of the motives for OSN use on information privacy concerns has been little studied. This is one gap we seek to address in this paper. In addition, previous research on information privacy concern suggests that the concept is a multidimensional construct (Smith, Milberg, & Burke, 1996). Measuring different dimensions of information privacy concerns increases our understanding of privacy attitudes in OSN settings as we can measure to what extent users are concerned about different aspects related to their information privacy. However, the conceptualisation and measurement of information privacy concerns in OSN literature is overgeneralised as most studies (e.g. Acquisti & Gross, 2006; Christy, Zach, & Tommy, 2015; Heravi, Mani, Choo, & Mubarak, 2017; Kim, 2016; Krasnova, Kolesnikova, & Guenther, 2009; Krasnova, Spiekermann, Koroleva, & Hildebrand, 2010; Tufekci, 2008; Zlatolas, Welzer, Heričko, & Hölbl, 2015) have examined it as a single dimensional construct. Inspired by Smith, Milberg, & Burke (1996), therefore, this study examines information privacy concerns in four dimensions: *Collection, Errors, Improper Access* and *Unauthorized Secondary Use*.

The discordance between self-reported privacy concerns and actual privacy behaviors, or "privacy paradox" (Barnes, 2006) has been investigated in different contexts including OSN (Kokolakis, 2017). In some of such OSN studies, privacy behavior is examined as either self-disclosure (e.g. Hallam and Zanella, 2017; Taddicken, 2014) or privacy setting usage (e.g. Heravi, Mubarak, & Choo, 2015). To gain a better understanding of privacy behavior, thus, the current research regards privacy behavior as both self-disclosure and using privacy protective measures, which is broader than just using privacy settings and includes being cautious in joining groups, accepting friend requests, and being familiar with the privacy settings. Our aim is to investigate whether dichotomy between privacy concern and privacy behavior exist.

This research is carried out through two studies. In Study 1, the focus is to identify the prevalent motives for using OSN. Employing uses and gratifications theory, the aim is to address the following research question:

RQ-1 "What are the salient motives for using OSN?"

In Study 2, Smith, Dinev, & Xu's (2011), APCO (Antecedents → Privacy Concerns → Outcomes) model is implemented to study information privacy in OSN context. This overarching macro model was developed based on a meta-review of privacy-related literature (320 articles and 128 books and book sections) across multiple disciplines and was recommended as a guide for researchers examining information privacy. APCO demonstrate an approach to achieve rigorous understanding of information privacy. It considers privacy concern as a proxy for information privacy and highlights the importance of examining both the antecedents to privacy concerns and its outcomes. This model suits our research objective as it is empirically validated in previous OSN studies (e.g. Jia, Wisniewski, Xu, Rosson, & Carroll,

2015; Lankton & Tripp, 2013). More importantly, the generalizability of APCO provides ample flexibility to study OSN users' privacy concerns and behaviour.

Using APCO model, Study 2 investigates both the antecedents to and outcomes of information privacy concerns. The impact of the motives identified from Study 1 is examined on information privacy concerns to determine whether motives serve as antecedents of information privacy concerns. The outcomes of information privacy concerns will be studied by examining the effect of information privacy concerns on self-disclosure and privacy protective measures. This enables us to investigate whether privacy concerns align with privacy behaviour. Study 2 seeks to answer the following research questions:

RQ-2: How do gratifications or motives to use OSN affect information privacy concern?

RQ-3: How do privacy concerns affect privacy behaviour?

The reason for conducting two studies is that we consciously did not adopt the identified motives for OSN use from previous research. Study 1, therefore, is designed to discover the motivations that drive people to use OSN. Then, the findings of Study 1 are used in Study 2, which is the main focus of this paper. The motivation for carrying out Study 1 is explained in Section 3.

2. Literature review

2.1. Uses and gratifications theory

Uses and gratification theory (U&G), a sub-category of mass media effect research (McQuail, 1994), provides a framework for exploring why and how people use media. Scholars employ U&G to study motivation, usage patterns, gratifications sought/obtained and consequences of media use (Katz, Haas, & Gurevitch, 1973, McQuail, 1994, Ruggiero, 2000). U&G is an audience-centred approach which suggests the audiences (users) select the medium that fulfils their needs (Sundar & Limperos, 2013). The focus of the U&G approach is to study the motivation or gratification resulting from media use.

In their study, Katz, Haas, & Gurevitch (1973), identified the needs gratified by the use of 'traditional' media (radio, television, newspapers, books and cinema). They broadly categorised 35 social and psychological needs into *Cognitive needs* (strengthening information, knowledge, and understanding), *Affective needs* (improving aesthetic, pleasurable and emotional experience), *Integrative needs* (improving credibility, stability, status), *Social Integrative needs* (strengthening contact with family, friends and the world), and *Escape needs* (weakening of social roles and contacts). Although the study was conducted long before the widespread take-up of OSN, it is still relevant today and can be used to analyse what motivates people to use OSN. For example, social integrative needs in the context of OSN include staying in contact with friends and family, which is a key function of OSN. Moreover, one can have a pleasurable and emotional experience by finding and reuniting with old friends, posting/reading comments posted by other users, and sharing/viewing photos, which satisfy a user's affective needs. Using OSN to obtain information (e.g. news, events, what other people are up to) fulfils cognitive needs and gaming via OSN is an example of meeting the user's escape needs. Finally, tailored self-presentation (presenting the self in a way that one wishes to be regarded) though OSN may gratify integrative needs.

In the current study, the terms "motive" and "gratification" are used interchangeably. The underlying assumption is that in U&G, gratification derives from media use and people use media to fulfil their needs (Webster & Wakshlag, 1983). In other words, people are motivated to use media to gratify their needs. Therefore, "need" is the common core concept in both motivation and gratification. If, for example, someone is motivated to use OSN for fun, the gratification obtained would be related to the fun gained from using OSN. Thus, in this paper, it does not seem necessary to distinguish between the two, although it can also be argued that using media may not necessarily lead to gratification. For example, some scholars have distinguished between gratification sought and gratification obtained (e.g. McQuail, 1994; Palmgreen, Wenner, & Rayburn, 1980; Wenner, 1982)—see Figure 1. Gratification obtained is the actual gratification of media use while the former is the expected gratification that will be obtained through using a medium. When gratification obtained has a higher value than gratification sought, it is likely that users are highly satisfied with the media, and vice versa (McQuail, 1994). As the focus of this study is on current OSN users, it can be assumed that gratification has already been obtained since participants are unlikely to use OSN if it does not fulfil their needs. This is the common school of thought in OSN literature and only a few studies (e.g. Dunne, Lawlor, & Rowley, 2010; Johnson & Yang, 2009) have explored both gratification sought and gratification obtained.

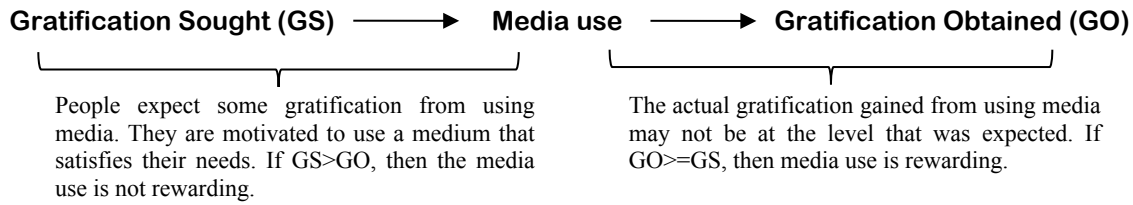


Fig 1. Gratification sought versus gratification obtained

2.2. U&G in OSN

We conducted a systematic search for scholarly articles on Google Scholar, Web of Science, ScienceDirect and IEEEExplore using keywords such as “uses and gratification” and “motives/motivation” in combination with terms such as, “online social network”, “Facebook”, and “social network site”. The focus of the review was limited to articles that (1) explicitly investigated OSN using the U&G framework, and (2) had been published in a peer-reviewed academic journal or peer-reviewed conference proceedings. We located 97 articles published between January 2007 and January 2016. Thirty-six articles ($n=36$, 37.1%) were published in *Computers in Human Behavior*. This is the largest number of U&G papers in the context of OSN that have been published in one venue.

In the majority ($n=55$, 56.7%) of the articles, the gratifications from or motives for OSN use were identified. Table 1 presents the findings of these articles. Factor analysis was the most frequent statistical method used in these studies ($n=31$, 56.3%) to identify the gratifications/motives. Other most commonly used methods were: principal components analysis ($n=8$, 14.5%), qualitative approach ($n=7$, 12.7%), descriptive statistics ($n=5$, 9%), and combined methods ($n=4$, 7%). In the remaining articles ($n=42$, 43.2%), the gratifications/motives identified from previous literature were adopted.

Table 1.

The identified gratification/motives for using OSN by employing U&G approach

Studies	Studied OSN	Identified Motives
Bumgarner (2007)	Facebook	Social utility, Directory, Voyeurism, Herd instincts, Collection and connection, Personal expression, Initiating relationships.
Nyland & Near (2007)	MySpace	Meeting new people, Entertainment, Maintaining relationships, Learning about social events, Sharing media.
Joinson (2008)	Facebook	Social connection, Shared identities, Content, Social investigation, Social network surfing, Status updating.
Raacke (2008)	MySpace and Facebook	Keep in touch with old and current friends, Post/look at pictures, Make new friends, Locate old friends.
Sheldon (2008a)	Facebook	Relationship maintenance, Passing time, Virtual community, Entertainment, Coolness, Companionship.
Sheldon (2008b)	Facebook	Relationship maintenance, Passing time, Virtual community, Entertainment, Coolness, Companionship.
Ancu & Cozma (2009)	MySpace	Social interaction, Information seeking and guidance, Entertainment.
Johnson & Yang (2009)	Twitter	Social motives, Information motives.
Park, Kee, & Valenzuela (2009)	Facebook	Socializing, Entertainment, Self-status seeking, Information.
Urista, Qingwen, & Day (2009)	MySpace and Facebook	Efficient communication, Convenient communication, Curiosity about others, Popularity, Relationship formation and reinforcement.
Dunne, Lawlor, & Rowley (2010)	Bebo	Communication, Friending, Identity creation and management, Entertainment, Escapism and alleviation of boredom, Information search, Interacting with boys.
Quan-Haase & Young (2010)	Facebook and IM	Pastime, Affection, Fashion, Share problems, Sociability, Social information.
Baek, Holton, Harp, & Yaschur (2011)	Facebook	Information sharing, Convenience and entertainment, Pass time, Interpersonal utility, Control, Promoting work.
Kim, Sohn, & Choi (2011)	General OSN	Seeking friends, Social support, Entertainment, Information, Convenience.
Zhang, Tang, & Leung (2011)	Facebook	Social surveillance, Entertainment, Recognition, Emotional support, Network extension, Network maintenance.
Alhabash, Park, Kononova,	Facebook	Social connection, Status updates, Contents, Social investigation,

Chiang, & Wise (2012)		Photographs, Shared identities, Network surfing.
Ancu (2012)	Facebook	Mood management (entertainment and emotional connectivity), Social action (express opinions and news, and establish relationships).
Hunt, Atkin, & Krishnan (2012)	Facebook	Entertainment, Passing time, Information seeking, Self-expression, Interpersonal utility.
Tosun (2012)	Facebook	Managing long-distance friendships, Passive observations, Initiating/terminating romantic relationships, Establishing new friendships, Active forms of photo related activities, Games and entertainment, Organizing social activities.
Balakrishnan & Shamim (2013)	Facebook	Social networking, Psychological Benefits, Entertainment, Self-presentation, Skill enhancement.
Choi, Jung, & Lee (2013)	Facebook and CyWorld	Curiosity, Social status, Self-expression, Entertainment, Relationship.
Ezumah (2013)	Facebook, Twitter, Myspace and LinkedIn	Keeping in touch with friends, sharing photos, keeping in touch with family, Reconnecting with old friends, Entertainment, Getting news.
Giannakos, Chorianopoulos, Giotopoulos, & Vlamos (2013)	Facebook	Social Connection, Social Network Surfing, Wasting Time, Using Applications.
Karnik, Oakley, Venkatanathan, Spiliotopoulos, & Nisi (2013)	Facebook	Contribution, Discovery, Social interaction, Entertainment.
Ku, Chen, & Zhang (2013)	General OSN	Information, Entertainment, Fashion, Sociability, Relationship maintenance.
Ku, Chu, & Tseng (2013)	General OSN, IM and e-mail	Relationship maintenance, Information seeking, Amusement, Style. Common gratification from OSN, IM: Sociability.
Leung (2013)	General OSN	Showing affection, Venting negative feelings, Gaining recognition, Getting entertainment, Fulfilling cognitive needs.
Pai & Arnott (2013)	Facebook	Belonging, Hedonism, Self-esteem, Reciprocity.
Pornsakulvanich & Dumrong Siri (2013)	General OSN	Passing time, Friendship, In trend, Relationship maintenance, Entertainment, Relaxation.
Spiliotopoulos & Oakley (2013)	Facebook	Social Connection, Shared identities, Photographs, Content, Social Investigation, Social network surfing, Newsfeed.
Whiting & Williams (2013)	General OSN	Social interaction, Information seeking, Pass time, Entertainment, Relaxation, Communicatory utility, Convenience utility, Expression of opinion, Information sharing, Surveillance/knowledge about others.
Wohn & Lee (2013)	Facebook	Common ground, Reciprocity, Coping, and Passing time.
Yang & Brown (2013)	Facebook	Relationship formation, Relationship maintenance.
Aladwani (2014)	Facebook	Connecting, Sharing, Organizing, Branding, Expressing, Monitoring, Learning, Relaxing.
Alhabash, Chiang, & Huang (2014)	Facebook	Entertainment, Information sharing, Medium appeal, Escapism, Socialization, Self-documentation, Self-expression.
Baek, Cho, & Kim (2014)	Facebook	Information sharing, Convenience and entertainment, Pass time, Interpersonal utility, Control, Promoting work.
Chan (2014)	Facebook	Social identity, Entertainment, Information seeking, Socializing, Guidance, Convenience, Status seeking.
Chang & Heo (2014)	Facebook	Social motives, Hedonic motives, Utilitarian motives, Social investigation motives.
Chung (2014)	General OSN	Relax, Help others, Meet others, Seek information, Maintain offline relationship.
Doty & Dworkin (2014)	General OSN	Communicate with child, Family, Child's friend, Community, Networking, Likeminded others, Fun, Express self, Caregiver.
Hollenbaugh & Ferris (2014)	Facebook	Virtual community, Companionship, Exhibitionism, Relationship maintenance, Passing time.
Karimi, Khodabandelou, Ehsani, & Ahmad (2014)	General OSN	Interpersonal utility, Pass time, Entertainment, Information seeking, Convenience.
Krause, North, & Heritage (2014)	Facebook	Entertainment, Communication, and Habitual diversion.
Orchard, Fullwood, Galbraith, & Morris (2014)	General OSN	Procrastination, Freedom of expression, Conformity, Information exchange, New connections, Ritual, Social maintenance, Escapism, Recreation, Experimentation.
Park & Lee (2014)	Facebook	Entertainment, Communication, Relationship maintenance, Self-expression, and Professional use.

Shoenberger & Tandoc (2014)	Facebook	Affection, Bandwagon, Self-expression, Entertainment, Escape, Companionship, Excitement, Sociability.
Tanta, Mihovilović, & Sablić (2014)	Facebook	Discuss school activities, Set up meetings and dates with friends, Entertain myself, Hang out with my friends, Inform myself about social events.
Asghar (2015)	Facebook	Information Seeking, Social Searching, Hedonic Proclivity, Social Browsing, Consumer Trends Information, General Erudition.
Florenthal (2015)	LinkedIn	Interpersonal communication, online identity, information, Career development.
Korhan & Ersoy (2015)	General OSN	Keep in touch with friends, Getting the news, Keep in touch with family, Learning, Entertainment.
Miller (2015)	General OSN	Safety, Control, Easiness, Accessibility, Mobility, Connectivity, Versatility
Rattanasimakul (2015)	Facebook	<u>Adolescents</u> : Filling time when feeling lonely and finding new friends, Performing identity, Feeling connected with their friends. <u>Working ages</u> : Having interaction with friends and Exhibiting their feelings, duties and success, Keeping relationship of their friends and Getting information and advice. <u>Elderly</u> : Following up activities of their friends in the same age, Communicating their own activities to group of friend.
Yazdanparast, Joseph, & Qureshi (2015)	Facebook	Keeping in touch with friends and family, interactivity and ability to look at pictures and watch videos.
Malik, Dhir, & Nieminen, (2016)	Facebook	Affection, Attention seeking, Disclosure, Habit, Information sharing, Social influence.
Sheldon & Bryant (2016)	Instagram	Surveillance/Knowledge about others, Documentation, Coolness, and Creativity.

While most studies identified or adapted gratifications/motives for general OSN use, 19 articles examined gratifications/motives for a specific OSN use (see Table 2).

Table 2.

Studies that examined the gratifications/motives for a specific OSN use

Studies	Specific OSN use
Ancu & Cozma (2009)	Accessing political candidate profiles on MySpes
Park, Kee, & Valenzuela (2009)	Participating in Facebook groups
Baek, Holton, Harp, & Yaschur (2011)	Link sharing on Facebook
Barker & Ota (2011)	Photo sharing in Facebook and diary writing in Mixi
Taylor, Lewin, & Strutton (2011)	Users' attitudes toward ads on OSN
Karnik, Oakley, Venkatanathan, Spiliotopoulos, & Nisi (2013)	Posting music videos on Facebook
Leung (2013)	Content generation on OSN
Wohn & Lee (2013)	Play games on Facebook
Chan (2014)	Facebook group use
Chung (2014)	How patients benefit from OSN
Doty & Dworkin (2014)	Using OSN for parenting
Krause, North, & Heritage (2014)	Music listening applications on Facebook
Walker (2014)	Thoracic Outlet Syndrome awareness group on Facebook
Asghar (2015)	Information seeking in Facebook
Chen, Sin, Theng, & Lee (2015)	Misinformation sharing on OSN
Han, Min, & Lee (2015)	Social connection on Twitter
Korhan & Ersoy (2015)	OSN applications
Miller (2015)	Mobile social networks for men who have sex with men
Malik, Dhir, & Nieminen (2016)	Digital photo sharing on Facebook

In the review of the literature, it was observed that different labels were assigned to the same gratifications/motives (see Table 3). Although the labels and number of gratifications/motives vary across the studies, entertainment, relationship maintenance, relationship building, and information seeking appeared to be the dominant gratifications/motives.

Table 3.

Different labels for the same gratifications/motives

Using OSN to establish new relationships	Initiating relationship, Meeting new people, Make new friends, New connections, Relationship formation, Friending, Meet others
Using OSN for enjoyment	Leisure, Games and entertainment, Fun, Relaxing, Excitement, Relaxation, Coolness, Habitual diversion, Entertain myself, Pass time, Games.
Using OSN to maintain current relationships and/or build new relationships	Sociability, Social utility, Interpersonal utility, Social motives, Social interaction, Socializing, Keeping in touch with friends and family, To socialize and interact with friends, Seeking friends, Social connection, Network maintenance, Social maintenance, Connectivity, Networking, Socialization, Interpersonal communication, Communication, Social action, Connecting, Maintain offline relationship.
Using OSN to get information	Surveillance/knowledge about others, Monitoring, Social network surfing, Network surfing, Getting news, Information search, Social information, Social Browsing, Seek information, Social investigation, Social Searching, information, Curiosity about others.

2.3 Information Privacy in OSN

Privacy is a multifaceted concept that can be examined from different dimensions (e.g. physical privacy, social privacy and information privacy) and perspectives (e.g. legal and technical), and in different contexts. Our focus in this paper is on information privacy in the context of OSN. Stone, Gueutal, Gardner, & McClure (1983, p. 460) define information privacy as “the ability (i.e., capacity) of the individual to control personally (vis-a-vis other individuals, groups, organizations, etc...) information about one's self”. Burgoon et al. (1989, p. 134) describe information privacy as the “ability to control who gathers and disseminates information about one's self or group and under what circumstances”.

The major theme emerging from the above definitions as well as from other studies (e.g. Kang, 1998; Westin, 1968, 2003) includes the individual's right to control the extent and circumstances under which their information is accessed. This concept is adopted in this paper which will define information privacy in OSN as: “the user's right to protect and control his/her personal data including user-generated content such as profile and wall pages information, friend lists, news feeds, private interactions (i.e. messages and chats), public and non-public photos, videos and purchasing history by determining to what extent other users, OSN providers and third parties can access the data”.

Information privacy concern reflects users' perception of the possibility of privacy breaches and the risks associated with the violation of privacy. Gross and Acquisti (2005) conducted one of the first comprehensive studies on information privacy concern in OSN settings; they found that most Facebook users were oblivious to privacy risks. Similarly, the results from a study by Tuunainen, Pitkänen, & Hovi (2009) revealed that Facebook users did not show notable concerns about privacy. The findings of more recent studies, however, suggest that OSN users have become more aware of privacy risks and their attitudes have shifted toward being more concerned about privacy (Dey, Jelveh, & Ross, 2012; Hazari & Brown, 2013; Heravi, Mubarak, & Choo, 2015; Mohamed & Ahmad, 2012). Young & Quan-Haase (2013) argue that Facebook users are more concerned about social privacy than institutional privacy. The former refers to the concern about who has access to personal information while the latter is related to the concern about how third parties or OSN providers use personal information.

Inspired by Smith, Milberg, & Burke (1996), to explore information privacy concerns in OSN, we examined four dimensions: 1- *Collection* (users' concerns about the collection of their personal information by OSN providers); 2- *Unauthorized Secondary Use* (users' concern about their information being accessed and utilised without their authorisation); 3- *Improper Access* (users' perception about OSN providers' responsibility to protect their personal information against unauthorised access); and 4- *Errors* (users' concern about the technical aspects of protecting privacy provided or implemented by the OSN providers).

2.3.1 Motives and information privacy

In our literature review, we found that no article has conducted a thorough examination of the impact of motives or gratification of OSN use on information privacy concerns. Nevertheless, the relationship between the two constructs was briefly investigated in two (out of the 97) articles. In the study by Spiliotopoulos & Oakley (2013), first, seven motives for Facebook use through conducting exploratory factor analysis on items used in previous studies were identified (see Table 1). Then, a multiple regression was run with the motives as dependent variables and privacy concern as an independent variable and controlling the variance explained by

some demographic information. Privacy concern was measured by a single question. From the motives, only “shared identities” emerged as a direct and positive predictor of privacy concerns. The regression model explained 13.2% of the variance in privacy concern. In the other study, Abbas & Mesch (2015) examined the relationship between two motives for Facebook use (i.e. maintaining relationships and building new relationships) and privacy concerns. The labels for motives were adapted from earlier literature. In their regression model, the motives were dependent variables and privacy concern was considered as one of the independent variables. Privacy concern was a direct and positive predictor of only the “building new relationship” motive. In both of these studies, privacy concern was examined as a single dimension construct.

2.4. Self-disclosure

Self-disclosure in face-to-face settings is defined as “the process of making the self known to other persons” (Jourard & Lasakow, 1958, p. 91). McCroskey & Richmond (1977, p.40) describe self-disclosure as “any information about the self that is intentionally or unintentionally communicated to another person”. The information communicated about the self can be about feelings, thoughts, dispositions, experiences and future plans (Derlega, Metts, Petronio, & Margulis, 1993; Derlega & Grzelak, 1979). The advent of computers enabled individuals to self-disclose through computer-mediated communications. In particular, OSN were designed in such a way that facilitates self-disclosure. This is due to the fact that self-disclosure is an essential determining factor of the commercial success of OSN providers (Krasnova, Spiekermann, Koroleva, & Hildebrand, 2010). Self-disclosure in OSN settings is referred to as “any personal information users provide on their profile (name, photo, contact details, political/religious affiliation, work/education information, etc.), and in the communication process with others (e.g. commenting, updating status, etc.)” (Heravi, Mani, Choo, & Mubarak 2017, p.1921).

Self-disclosure is a multidimensional construct. Altman & Taylor (1973), for example, suggested breadth and depth are the main dimensions of self-disclosure. Wheelless (1978) proposed a scale to measure self-disclosure according to five dimensions: amount, intent, depth, honesty, and positiveness. In previous OSN literature, Wheelless’s scale, or subscales of it, has frequently been applied (e.g. Chen & Marcus, 2012; Chennamaneni & Taneja, 2015; Hollenbaugh & Ferris, 2014, 2015; Huang, 2016; Park, Jin, & Jin, 2011; Varnali & Toker, 2015).

In the current study, we consciously measure *amount* (extent of self-disclosure), *breadth* (range of subjects in self-disclosure), *depth* (intimacy level in self-disclosure) and *honesty* (accuracy of self-disclosure) of self-disclosure. The logic behind examining these dimensions is that the extent, variety of topics, intimacy level and the veracity of information disclosure encompass the most salient aspects of self-disclosure on OSN. We did not measure the positiveness dimension as our focus in this study is on personal information disclosure regardless of whether it is positive or negative. Neither did we examine the intent dimension as the intention to self-disclose exists among OSN users. This is due to the circumstance that without self-disclosure one cannot participate in OSN. In addition, self-disclosure is considered as an integral part of identity construction in OSN (Krasnova, Günther, Spiekermann, & Koroleva, 2009). It can be argued, however, the users may unintentionally self-disclose. Investigating unintentional self-disclosure behaviors is beyond the scope of this study.

2.4.1 Information privacy and self-disclosure

In OSN settings, there are three contrasting schools of thought regarding the impact of privacy concern on self-disclosure: 1-privacy concern does not have a considerable impact on self-disclosure; 2-privacy concern negatively impacts self-disclosure; and 3- there is no link between privacy concern and self-disclosure.

Early studies about OSN (e.g. Acquisti & Gross, 2006; Gross & Acquisti, 2005; Tufekci, 2008) suggest that, despite users’ concern for privacy, they tend to disclose a considerable amount of personal information and the relationship between privacy concern and self-disclosure is minimal. In fact, a dichotomy between the stated privacy concerns and actual self-disclosure behaviors was evident. Tufekci (2008) pointed out that Facebook and Myspace student users were more concerned about how they would be perceived by their OSN peers than about their information privacy. Most of the later studies, however, indicated that concern for information privacy negatively impacts the extent of self-disclosure (e.g. (Krasnova, Günther, Spiekermann, & Koroleva, 2009; Stutzman, Capra, & Thompson, 2011; Xu, Michael, & Chen, 2013; Zlatolas, Welzer, Heričko, & Hölbl, 2015).

Some OSN studies applied privacy calculus to examine the link between self-disclosure and privacy concerns. According to this viewpoint, the decision to, or not to, reveal personal information is based on a subjective calculation of the costs and benefits associated with the information disclosure (Culnan & Armstrong, 1999; Dinev et al., 2006). Therefore, self-disclosure occurs when the benefits outweigh the costs. In the literature, privacy concern or perceived risks have been considered as the cost facet in the privacy calculus equation. The findings in the majority of those studies that employed privacy calculus to examine self-disclosure in OSN settings indicate that privacy concern hinders self-disclosure (e.g. Krasnova, Spiekermann, Koroleva, & Hildebrand, 2010; Krasnova & Veltri, 2011, McKnight, Lankton, & Tripp, 2011; Min & Kim, 2015; Shibchurn

& Yan, 2015; Xu, Michael, & Chen, 2013). Nevertheless, the results in Christy, Zach, & Tommy (2015), which also applied a privacy calculus, found no link between privacy concern and self-disclosure. Similarly, a recent study found that privacy concern did not predict self-disclosure (Hallam & Zanella, 2017).

2.5. Privacy behaviour

Privacy behaviour refers to the set of actions that OSN users take to protect their information privacy. It seems that over time OSN users have become more aware of the privacy risks that using OSN may entail and employ different strategies to maintain privacy. Privacy protection strategies include using privacy settings, limiting self-disclosure and friending requests (Ellison, Vitak, Steinfield, Gray, & Lampe, 2011; Heravi, Mubarak, & Choo, 2015; Young & Quan-Haase, 2013). In the current research, privacy behaviour is investigated by two constructs: self-disclosure and privacy protective measures. The latter construct measures the use, and familiarity with privacy settings as well as friending and joining groups. Previous studies have shown that using privacy-protective measures is aligned with privacy concerns. For example, Ellison, Lampe, Steinfield, & Vitak, (2011) and Stutzman and Kramer-Duffield (2010) found that a higher level of privacy concern is positively associated with having a friends-only profile. Similarly, Young & Quan-Haase (2013) showed that limiting friending requests from strangers is positively associated with privacy concerns.

3. Study 1

Our motivation to conduct Study 1 was driven by the little number of studies that qualitatively identified the motives for OSN use. From the 97 reviewed articles, only six studies (Florenthal, 2015; Miller, 2015; Pai & Arnott, 2013; Rattanasimakul, 2015, Urista, Qingwen, & Day, 2009; Whiting & Williams, 2013) employed qualitative method to identify the gratifications from or motives for OSN use (see Table 1).

The prevalent approach in quantitative U&G OSN studies is to find all the motivations for utilising OSN rather than focusing only on the main motives. The aim in such studies is to produce a comprehensive list of the motives for using OSN. This approach is related to the nature of quantitative research that focuses on causes and assumes reality is objectively measurable and it is common across individuals (Newman & Benz, 1988). In contrast, qualitative research is a form of ethnography that concentrates on understanding (not cause) and assumes reality is a social construct (Newman & Benz, 1988). In qualitative research, the attempt is to interpret the research topic in terms of the meanings people attach to them (Denzin & Lincoln, 1998). Therefore, it seems that qualitative research is more appropriate than quantitative research to gain an in-depth understanding of why people use OSN.

3.1. Research Method

Data was collected using online survey with an open-ended question and content analysis method was applied to analyse the data. Participants were asked a single question: "Please describe why you use online social networks (e.g. Facebook)". We consciously designed the question in such a way that participants could naturally describe their reason(s) or motive(s) for using OSN. The goal was to encourage participants to provide a meaningful reason(s) for why they use OSN.

The most common method for identifying motives for OSN use is to produce a list of possible motives and ask participants to select all those that apply to them. Then, by utilising factor analysis the researcher attempts to group motives statements into labelled categories (e.g. Asghar, 2015; Hart, 2010; Hollenbaugh & Ferris, 2014; Ku, Chen, & Zhang, 2013; Malik, Dhir, & Nieminen, 2016; Nyland & Near, 2007; Papacharissi & Mendelson, 2011; Namsu Park et al., 2009; Quan-Haase & Young, 2010; Sheldon, 2008b; Tosun, 2012). However, we did not intentionally provide a predetermined list of motivations because our objective was to capture the main motive(s) for OSN use. Even though OSN users may use OSN for multiple reasons, in answering the open-ended question participants would naturally mention only their primary motives, not all their reasons for using OSN. The participants' answers to the survey question resulted in a 4,051 worded document that served as the basis for our analysis.

Content analysis can be used to analyse the content of text data (Cavanagh, 1997). The textual data can be collected using a variety of methods including open-ended survey questions (Konracki, Wellman, & Amundson, 2002). Content analysis is defined as: "a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns" (Hsieh & Shannon, 2005, p. 1278). The outcome of this method is a list of themes or categories that formulate the overall explanation of the research topic (Elo & Kyngäs, 2008). Content analysis, therefore, is appropriate for analysing the worded document to determine the main motives for using OSN because the outcome of this method represents the motivations.

To increase our level of understanding of why people use OSN, both manifest and latent content analysis approaches were applied. In manifest content analysis, the emphasis is on the visible or obvious components of the text data whereas in latent content analysis the focus is on the underlying meaning (Downe-Wamboldt, 1992, Hsieh & Shannon, 2005).

The motives for OSN use were developed inductively from the worded document by the first author. Thirteen main motives were identified and these were grouped into five generic categories. To assess the reliability of the findings, both intrarater reliability and interrater reliability were measured. Intrarater reliability is the extent to which the result of the content analysis is consistent over time when the same person applies content analysis again on the same data, whereas interrater reliability or inter-coder reliability is the agreement between two different persons applying content analysis on the same data (Downe-Wamboldt, 1992).

Table 4.

Results of inter-coder reliability for all coded categories

Category	Percent agreement	Cohen's kappa*	Intraclass correlation coefficient*
Friends/Family	97.03%	.75	.86
Stay in touch	93.87%	.96	.98
New Friends	95.23%	.97	.98
Networking	98.66%	.98	.99
News/events	93.1%	.93	.96
Following people	67.5%	.76	.86
Gaming	100%	1.00	1.00
Fun	98.2%	.97	.988
Just use it	100%	1.00	1.00
Peer pressure	100%	1.00	1.00
Everyone	100%	1.00	1.00
Self-expression	87.5%	.92	.961
Easy	100%	1.00	1.00
Others	100%	1.00	1.00

* $p < .000$ for all categories

To assess intrarater reliability, Cohen's kappa was used to evaluate the consistency of the findings of the content analysis conducted by the first author at two different times; February 2016 and August 2016. The kappa level for the thirteen categories ranged between 0.96 and 1.00, suggesting a high level of consistency between the results of the two times (Downe-Wamboldt, 1992).

Next, two coders independently assigned the reasons/motives for OSN use to the categories identified by the first author. To ascertain interrater reliability, percent agreement, Cohen's kappa, and intraclass correlation coefficient were utilised to measure agreement reliability for each category coded (see Table 4). IBM SPSS Statistics v21 was used to calculate the last two methods and the first one was calculated by hand. As percent agreement does not take into account agreement due solely to chance, Cohen's kappa and intraclass correlation coefficient were used together to uncover non-random coder errors (Hunt 1986). The value of inter-coder reliability ranges from 0 (or 0%) to 1 (or 100%). Values closer to 1 represent higher reliability. The minimum recommended levels for percent agreement for Cohen's kappa and intraclass correlation coefficient are, respectively, 80% (McHugh, 2012), 0.7 (Downe-Wamboldt, 1992) and 0.6 (Chinn, 1991). As shown in Table 4 the inter-coder reliability of the categories is higher than the recommended levels. This indicates a high level of agreement between the two coders.

3.1.1. Participants

Participants were recruited from Google Consumer Surveys and SurveyMonkey, as it had been suggested that these web-based survey solutions can be used to obtain cost-effective and time-saving high-quality data (McDonald, Mohebbi, & Slatkin, 2012; Symonds, 2011). We used Google Consumer Surveys to collect data from 1500 people. However, 626 responses were excluded due to respondents reporting that they do not use OSN ($n=357$, 23.8%) or entering invalid answers ($n=269$, 17.9%). Therefore, 874 (41.7%) responses were retained for analysis. In addition, we received 67 responses from SurveyMonkey. After removing the invalid responses, 44 (65.6%) usable responses remained. The data collected through Google Consumer Surveys and SurveyMonkey were aggregated into one dataset that comprised 918 valid responses.

The numbers of female (50.4%, $n=463$) and male (49.6%, $n=403$) survey participants were approximately close and the largest age range was 25–34 (21.9%, $n=201$). In order of size, the remaining age groups were: 18–24 (18.8%, $n=173$); 55–64 (16.4%, $n=151$); 34–44 (15.8%, $n=145$); 45–54 (14.7%, $n=135$); and 65+ (12.3%, $n=113$).

3.2. Result

The first step in content analysis is to select the unit of analysis that derives from the research question (Elo & Kyngäs, 2008; Downe-Wamboldt, 1992). As the aim of this study is to identify the motives for OSN use, the reason/motive for OSN use was selected as the unit of analysis. Examples used for this unit of analysis are: “*cuz its fun*”, “*games*”, “*keep up with family*”, “*To see what everybody's doing*” and “*because everyone does*”. The number of reasons/motives in a response determined the number of units of analysis. For example, the response “*to chat with friends and to find new friends*” was considered as two units of analysis: 1- “*chat with friends*” and 2- “*find new friends*”. Similarly, “*To connect with new and old friends*” was counted as two units of analysis, as “*connect with new friends*” emphasises making new friends whereas “*connect with old friends*” refers to maintaining already established relationships. As some participants (n=183) reported more than one reason/motive for using OSN, the total number of reported reasons/motives (n=1052) or units of analysis was higher than the number of survey participants (n=918).

Second, the units of analysis were labelled or coded. The labels reflected the characteristic of the unit of analysis. For example, “*Just to see new stuff and what's going on*” was labelled as *Information* or “*To keep up with family that I don't see regularly*” as *Family*. The purpose of this step was to produce as many labels or codes as necessary to ensure all aspects of the data are captured (Elo & Kyngäs, 2008). The initial coding scheme comprised the following thirty-one codes: 1-Acquaintances; 2-Friends and family; 3-Friends; 4-Family; 5-Keep up; 6-Stay in touch; 7-Connected; 8-Socialising; 9-Communicate; 10-Networking; 11-Business; 12-New friend; 13-New people; 14-Fun; 15-Entertainment; 16-Boredom; 17-Pass time; 18-Game; 19-Information; 20-News; 21-Events; 22-Community; 23-People; 24-Habit; 25-No reason; 26-Peer pressure; 27-Everyone; 28-Share content; 29-Commenting; 30-Easy to use; 31-On smart phone.

Next, codes that were related were combined in order to achieve a smaller number of categories (Elo & Kyngäs, 2008; Hsieh & Shannon, 2005). This resulted in 13 codebook categories (see Table 5). Weber (1990) pointed out that when a unit of analysis belongs to more than one category, it can simultaneously be assigned to all the categories that it belongs to. As shown in Table 5, *Socialising* and *Communicate* were assigned to both “*Stay in touch*” and “*Networking*” categories. Therefore, the total number of units of analysis assigned to the categories (n=1128) were more than the number of reasons/motives reported by the survey participant (n=1058). The logic for this is that socialising and communicating refer to interacting with other people. We can interact with those who we know as well as with new people. “*Stay in touch*” refers to socialising and communicating through OSN with people known to us whereas “*Networking*” is considered as interacting with new people.

Table 5.
Grouping similar categories

New categories	Similar codes
1- Friends/Family	Acquaintances; Friends and family; Friends; Family
2- Stay in touch	Keep up; Stay in touch; Connected; Socialising; Communicate
3- Networking	Networking; Business; Socialising; Communicate
4- New friends	New friend; New people
5- Fun	Fun; Entertainment; Boredom; Pass time
6- Game	Game
7- News/current affair	Information; News; Events; Community
8- People	People
9- Just use it	Habit; No reason
10- Peer pressure	Peer pressure
11- Everyone	Everyone
12- Self-expression	Share content; Commenting
13- Easy	Easy to use; On smart phone

Finally, categories with similar characteristic were grouped to produce generic categories (Elo & Kyngäs, 2008) or themes (Graneheim & Lundman, 2004). Theme refers to linking the underlying meanings together in a category (Graneheim & Lundman, 2004). This process enabled us to formulate users’ motivation for using OSN. The outcome was five generic categories or themes (see Table 6).

To further examine the relationship maintenance motive, frequency analyses were conducted. The findings revealed that close to half of the participants (n=187, 46.2%) reported using OSN to stay in contact with their friends only while the figure for staying in contact with family was 94 (23.2%). Considering the age of the participants, younger people (18-34 year of age) mainly use OSN to stay in contact with their friends (n=122, 60%) whereas people over 35 primarily use OSN to stay in touch with their family (n=67, 71%). Of the 124

participants who stated that they utilised OSN to keep in touch with friends and family, the majority (n=66, 53%) first mentioned friends (e.g. “keep in touch with friends and family”) rather than family (e.g. “keep in contact with family and friends”). The analysis as a whole indicates that in maintaining existing relationships through OSN the emphasis is on friends.

Table 6.
Identified motives for OSN use

Generic Category/Theme	Category definition	Frequency	Percentage	
Relationship maintenance Friends/Family	<i>Managing current relationships</i>			
	Using OSN to keep in contact with acquaintances, friends, and relatives.	405	35.90%	
Stay in touch	Using OSN to stay in touch with people we know.	145	12.85%	
Relationship building Networking	<i>Establishing new relationships</i>			
	Using OSN to meet new people and establish new personal and/or business relationships.	150	13.30%	
New Friends	Using OSN for the opportunity to make new friends.	21	1.86%	
Information seeking News/current affairs	<i>Finding out what is going on</i>			
	Using OSN to get information, keep up with the news and events.	87	7.71%	
Following people	Using OSN to track people and see what they are up to.	40	3.55%	
Entertainment Fun	<i>Using OSN for enjoyment</i>			
	Using OSN for pleasure (i.e. having fun, being entertained, and passing time).	176	15.60%	
Gaming	Using OSN for plying games.	36	3.19%	
Others				
	Just use it	Using OSN for no particular reason.	18	1.60%
	Peer pressure	Using OSN because of the pressure of others.	11	0.98%
	Everyone use it	Using OSN because everyone else uses it.	11	0.98%
	Self-expression	Using OSN for expressing views and opinions and sharing content.	16	1.42%
	Easy to use	Using OSN because it is easy to use.	12	1.06%
	Total	1128	100.00%	

3.3. Discussion

The aim of Study 1 was to investigate the main motives for OSN use. The identified motives in order of prevalence were: 1-relationship maintenance, 2-entertainment, 3-relationship building, and 4-information seeking. The most commonly-found motivation for using OSN was relationship maintenance. This is consistent with previous findings that indicate OSN is primarily used for keeping in touch with friends and family (e.g. Alhabash, Park, Kononova, Chiang, & Wise, 2012; Ku, Chu, & Tseng, 2013; Sheldon, 2008a, 2008b; Yazdanparast, Joseph, & Qureshi, 2015).

Between friends and family, it was observed that greater emphasis was placed on staying in contact with friends through OSN. This finding is supported by Ezumah (2013) and Korhan & Ersoy (2015). In both studies, it is shown that a greater number of people across different OSNs (e.g. Facebook, MySpace) use the platforms to stay in touch with friends compared to family.

In the U&G approach, gratifications or motives for using media are generally examined at a single point in

Table 7.
Matching the findings to the Katz, Haas, & Gurevitch (1973) U&G framework

U&G framework	Findings of the current study
Cognitive needs	Information seeking (news/current affairs, following people)
Affective needs	Entertainment (fun)
Integrative needs	Relationship building (networking, new friends)
Social Integrative needs	Relationship maintenance (friends/family, stay in touch)
Escape needs	Entertainment (gaming)

time rather than over a period of time. However, Cutler & Danowski (1980) argue that in the U&G literature, motivations for media use have been mostly treated as stable over time. Comparing our findings with those of previous studies (Brandtzæg & Heim, 2009; Foregger, 2008; Joinson, 2008; Kim, Sohn, & Choi, 2011; Ng, 2016; Nyland & Near, 2007; Park, Kee, & Valenzuela, 2009; Papacharissi & Mendelson, 2011; Sheldon, 2008a;

Smock, Ellison, Lampe, & Wohn, 2011), it appears that the main motivations or gratification patterns of OSN use have not changed in the past few years. This is due to the fact that some of the main motives for OSN use are associated with users' basic needs (Brandtzæg & Heim, 2009). Examples of such needs identified in current and previous studies include social interaction (i.e. relationship maintenance and building), entertainment and information seeking. The motives identified in the present study agree with those recognised by the U&G framework of Katz, Haas, & Gurevitch (1973) (see Table 7).

4. Study 2

4.1. Research Method

4.1.1. Survey design and sampling

We used an online survey to collect data from the general public and university students. This enabled us to study a more diverse population as relying only on students would limit the generality of the results. To reduce common method bias, the survey questions were presented in a random order (Podsakoff, MacKenzie, Jeong-Yeon, & Podsakoff, 2003). In addition, two trap questions were designed (i.e. participants were asked to type a letter and select a specific scale) to screen out participants who were not cognitively engaged in answering the survey questions (Oppenheimer, Meyvis, & Davidenko, 2009). On average, participants completed the survey in 9 minutes and 57 seconds, which is adequate time to read and answer the survey questions.

The students were recruited through an announcement that advertised the online survey. The announcement was presented on students' portal for two weeks in January 2016. We received 228 responses from the student sample. Participants from the general public were recruited through the Mechanical Turk crowdsourcing web service (www.mturk.com). This platform enables researchers to recruit survey participants in a cost-effective and time-saving manner and obtain high-quality data (Buhrmester, Kwang, & Gosling, 2011; Paolacci, Chandler, & Ipeirotis, 2010). The online survey was advertised on Mechanical Turk for one week in February 2016. We received 309 responses.

Incomplete responses and those that failed to accurately answer both trap questions were removed from our dataset. From the total of 537 responses received, 16 (5 from the Mechanical Turk sample and 11 from the student sample) were removed, leaving 521 responses for data analysis.

4.1.2. Participants

Participants were from 37 different countries. In order, the numbers of the survey respondent were, from highest to lowest, from India (n=214, 41.1%), USA (n=205, 39.3%), Australia (n=67, 12.8%) and UK (n=13, 2.5%). The majority of the survey respondents (n=321, 61.6%) were male. The mean age of the participants was 32.98 (SD= 9.67, range=18–79) and on average, they had 370.65 OSN friends and spent daily 119.8 minutes on OSN. The education level of most participants (n=400, 76.8%) was either a Bachelor's degree (n=264) or a Master's degree (n=136).

4.1.3. Procedure

To address the research questions, regression analysis was conducted using IBM SPSS Statistics v21. Regression analysis has been widely used in previous U&G studies (e.g. Chang & Heo, 2014; Haridakis & Rubin, 2003; Hart, 2010; Hollenbaugh & Ferris, 2015; Stanley, 2015). Prior to analysing the regression models, we examined the data to detect outliers and highly influential points. No outlier was detected as the absolute values of the studentized residuals were less than 3 (Hocking 2003, p. 54). Influential points refer to the subset of the data that has more influence on the predictions than the majority of the data. As the Cook's distance of all the cases was less than 1, no highly influential point was identified (Montgomery & Peck, 1982, p. 164).

To ascertain the validity of the regression analyses, the residuals or the estimates of errors were evaluated for all regressions (Chatterjee & Price, 1977). Three assumptions are central to linear regression models: normality, homoscedasticity and independence (Jarque & Bera, 1980). Normality refers to the normal distribution of the residuals. To check for the assumption of normality, a histogram and a P-P Plot of the residuals were used (Montgomery and Peck, 1982, p. 61). The histograms had superimposed normal curves and the points in P-P Plots were approximately aligned along the diagonal line, indicating that the assumption of normality is met. The consistency of residual variance or homoscedasticity can be assessed by visual inspection of a plot of studentized residuals (residual divided by its standard error) versus unstandardized predicted values (Montgomery & Peck, 1982, p.63). If the patterns in a plot indicate that variance is a decreasing or increasing function of a predicted value, the residuals are heteroscedastic or homoscedasticity is violated (Chatterjee & Price, 1977). The residuals in all the plots appeared to be randomly scattered. On this basis, the assumption of homoscedasticity for all regression models was satisfied. Independence or autocorrelation refers to the assumption that the residuals are independent of each other. The Durbin-Watson statistic is a common test for assessing independence of the residuals in regression models (Chatterjee & Price, 1977, p. 125). The value of the

Durbin-Watson statistic has a range from 0 to 4; the closer the values to 2, the stronger the evidence that residuals are independent or there is no correlation between the residuals (Chatterjee & Price, 1977, Draper & Smith, 2014). The value of Durbin-Watson for our regression models ranged from 1.823 to 2.010, demonstrating the independence of the residuals.

In addition to evaluating the residuals, multicollinearity and linearity of all of our regression models were assessed. Multicollinearity occurs when two or more independent variables are highly correlated. This can potentially lead to unreliable estimates of the regression coefficients, which results in having large variances and co-variances (Draper & Smith, 2014, p.369). One way for detecting multicollinearity is using a Variance Inflation Factor (VIF), which calculates how much the variance of the estimated regression coefficients is inflated when multicollinearity exists. The VIF values for our dependent variables ranged from 1.935 to 3.962. Since the VIFs did not exceed 10, there was no evidence of multicollinearity (Chatterjee and Price, 1977, p. 182; Montgomery & Peck, 1982, p.300). The linearity or the collective linear relationship between the independent and dependent variables of our regression models was assessed by the same plots that were used to evaluate homoscedasticity. In all the plots, the residuals formed a horizontal band demonstrating that the linearity assumption of the regression models is met (Montgomery & Peck, 1982).

4.1.4. Measures

Wherever it was possible, we used existing measures to ensure validity. However, we had to change or develop some measures to align with the context of this study. All scale items were measured on a 5-point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Participants were asked to rate the extent to which they agreed or disagreed with each statement. As shown in Table 8, all scales were found to be reliable, with a high level of internal consistency determined by Cronbach's alphas above the 0.7 threshold.

Table 8
Means, standard deviations, and Cronbach's alphas for all scales

Scales	Items	Mean	Std.Dev	α
Entertainment	5	3.958	0.832	0.870
Information seeking	6	3.898	0.727	0.787
Relationship maintenance	5	4.176	0.773	0.842
Relationship building	5	3.900	0.770	0.938
Collection	6	3.720	0.922	0.883
Errors	6	3.977	0.696	0.759
Improper access	4	4.364	0.703	0.854
Unauthorized secondary use	6	4.135	0.712	0.796
Privacy protection behaviour	6	4.338	0.621	0.785
Self-disclosure: Amount	5	2.934	1.056	0.880
Self-disclosure: Breadth	3	3.537	0.971	0.802
Self-disclosure: Depth	4	2.669	1.137	0.863
Self-disclosure: Honesty	5	3.406	0.925	0.846

The initial draft of the survey was presented to two IS scholars and two IS PhD students. Based on the comments received, a few minor changes to the wording of the questions were implemented. However, the length of the questions was satisfactory and it was confirmed that the items captured the topic of investigation. Afterward, the survey was pilot-tested with 111 participants. The analysis of the pilot data indicated that the scales are reliable. The final survey is presented in Appendix B.

4.2. Result

To answer RQ2 and investigate the impact of the motives on information privacy concerns, four separate multiple regressions were conducted (see Table 9). In these regressions, the dimensions of information privacy concern were regressed on the main motives identified for OSN use. The only motive that was a significant predictor for information privacy concern across all four dimensions was information seeking. From the motives, only entertainment and relationship building had negative coefficients. This indicates that users who employ OSN for fun or establishing new relationships are more likely to be concerned about some aspects of their information privacy. As shown in Table 9, all the regression models are statistically significant. However, the models only explain three or six percent of the variance in the information privacy dimensions. In other words, the motives for OSN use account for a small percentage of the variability in information privacy concern dimensions. Moreover, correlation analysis indicated that the largest value of the correlation coefficient of the significant correlations between the motives and information privacy concern dimensions (see Table 1 in Appendix A) was 0.167, that is, a weak strength correlation (Cohen, 1988). The total number of motives for OSN use was also correlated significantly with the total information privacy concern ($r = .092, p = .035$). The

value of the correlation coefficient, however, indicates a very weak association between the variables. Overall, it cannot be concluded that OSN users have either a lax or a strict attitude to information privacy because of the motives for or gratification they receive from using OSN.

The results from exploring the mean scores (see Table 8) of the information privacy concern dimensions (higher mean values indicate higher concern level) suggested that users were most concerned about improper access (mean=4.364) and least concerned about collection (mean=3.720). The frequency analysis revealed that most participants (n=397, 76.2%) were not confident of how OSN providers protect their information against unauthorised access (i.e. improper access). Aggregations of personal information by OSN providers, however, provoked less users' concern: about half of the participants (n=264, 50.7%) expressed low levels of concern for the collection dimension of information privacy concerns. Based on the mean value (see Table 8), the order of the motives for OSN use was: relationship maintenance (4.176), entertainment (3.958), relationship building (3.900), and information seeking (3.898). This is consistent with the findings of Study 1 as a higher mean value indicates being more motivated.

Table 9

Regressing information privacy concern on the motives for OSN use

	Collection	Errors	Improper access	Unauthorized secondary use
Predictors	β	β	β	β
Entertainment	-.17**	-.19**	-.05	-.14*
Information seeking	.19**	.21***	.13*	.14*
Relationship building	-.02	-.12**	-.26**	-.19*
Relationship maintenance	.07	.28	.4***	.28**
R^2	.03*	.06***	.06***	.03**

Note: β = standardized coefficient, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 10

Regressing self-disclosure on information privacy concern

	Amount	Breadth	Depth	Honesty	Privacy-protective measures
Predictors	β	β	β	β	β
Collection	.30***	.06	.35***	.11	-.02
Errors	.09	.09	-.01	.07	.26**
Improper access	.03	.05	-.11	.10	.31***
Unauthorized secondary use	-.47***	-.33***	-.42***	-.29*	.01
R^2	.09***	.03**	.13***	.02*	.28***

Note: β = standardized coefficient, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

The third research question addresses the impact of information privacy concern on privacy behaviour. To answer the question, the relationships between information privacy concerns and self-disclosure and privacy protective measures were examined. First, the dimensions of self-disclosure were regressed on information privacy concern dimensions (see Table 10). The R^2 value of the models indicates that information privacy concern has limited explanatory power to predict self-disclosure, especially for honesty and breadth of self-disclosure. Among the information privacy dimensions, unauthorized secondary use was the only dimension that had a negative impact on self-disclosure and was a significant predictor for self-disclosure across all four dimensions. Participants who were concerned about unauthorized secondary use of their personal information were more likely to reveal less personal information on OSN. Interestingly, collection served as a direct positive predictor of the amount and breadth of self-disclosure, whereas error and improper access did not predict any dimensions of self-disclosure. Correlation analysis revealed that a negative, very weak and statistically significant correlation exists between total information privacy and total self-disclosure ($r = -.092, p < .05$). While collection was not associated with any self-disclosure dimensions, errors and unauthorized secondary use of personal information were both correlated with amount and depth of self-disclosure (see Table 2 in Appendix A). The r value of the correlations, however, indicated that information privacy has little influence on self-disclosure. Among the self-disclosure dimensions, breadth and depth had the highest (3.537) and lowest (2.669) mean value, respectively (see Table 8). Higher mean value reflects a greater degree of self-disclosure. Most participants reported high breadth (n=355, 68.1%) and low depth (n=321, 61.6%) in their self-disclosure. This suggests that participants tended to disclose information about themselves over a range of topics at a superficial level.

Second, to examine the effect of information privacy concerns on privacy protective measures, a multiple regression was conducted. The construct of privacy protective measures was regressed on the information

privacy concern dimensions (see Table 10). The regression model explained 28% of the variance in privacy-protective measures, $F(4, 516) = 49.034$, $p < .001$ adjusted $R^2 = .270$. Errors and improper access served as a direct predictor of privacy protective measures. Participants who were concerned about the efficiency and the technical measures that OSN providers take to protect personal information were more likely to adopt a conservative attitude in utilising OSN. Privacy-protective measures was significantly correlated with total information privacy concern ($r = .476$, $p < .001$) and each of its dimensions: collection ($r = .288$, $p < .001$), errors ($r = .490$, $p < .001$), improper access ($r = .485$, $p < .001$), and unauthorized secondary use ($r = .417$, $p < .001$).

Table 11
Regressing self-disclosure on motives and information privacy concern

	Amount	Breadth	Depth	Honesty
Predictors	β	β	β	β
Step 1				
Collection	.16**	.00	.17**	.09
Errors	.00	.09	-.06	-.03
Improper access	-.10	.14	-.14*	.01
Unauthorized secondary use	-.23**	-.12	-.21**	-.15
Step 2				
Entertainment	.16**	.11*	.08	.30***
Information seeking	.05	.15**	.06	.10
Relationship building	.39***	.28***	.45***	.32***
Relationship maintenance	.20***	.27***	.05	-.12
R^2	.50***	.36***	.43***	.31***
ΔR^2	.409***	.324***	.302***	.288***

Note: β = standardized coefficient, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, ΔR^2 increase in R^2 value

The correlation analysis revealed that the total motives for OSN use correlated significantly with total self-disclosure ($r = .643$, $p < .001$). In addition, all motives were correlated with each self-disclosure dimension (see Table 3 in Appendix A). Given these significant correlations, hierarchical regressions were conducted on each of the four self-disclosure dimensions. The information privacy dimensions were entered on the first step of the hierarchical regression. Then, the four motives were entered as the second block of predictors (see Table 11). The intention was to determine whether the addition of the motives improved the prediction of self-disclosure. As shown in Table 11, adding the motives led to a statistically significant and considerable increase in R^2 values in all regression models. However, a hierarchical regression was not conducted on privacy protective measures as the correlations between the motives and privacy protective measures were weak (see Table 3 in Appendix A).

Age and gender were removed from the hierarchical regression as the model ($R^2 = .006$, $F(2, 518) = 1.648$, $p = .193$; adjusted $R^2 = .002$) of these two variables to predict self-disclosure was not statistically significant. Moreover, the correlation analysis indicated that the effect of age/gender on privacy concern and self-disclosure were of little practical importance as the correlations were very weak (see Table 2 in Appendix A).

Exploration of the full regression models indicated that relationship building was the only motive that was a significant positive predictor for self-disclosure across all its dimensions, and no dimension of the information privacy concern served as a direct predictor of breadth and honesty of self-disclosure.

4.2.1. Amount of self-disclosure

The full regression model explained 50% of the variance in amount of self-disclosure, $F(8, 512) = 36.308$, $p < .001$, adjusted $R^2 = .493$. Direct predictors of the amount of self-disclosure were found to be: collection, unauthorized secondary use, entertainment and relationship maintenance and building. Interestingly, collection had a positive impact on the amount of self-disclosure. Participants who mainly used OSN to have fun, maintain/establish relationships, and were concerned about unauthorized secondary use of their OSN data were more likely to reveal less personal information.

4.2.2. Breadth of self-disclosure

The final regression model explained 36% of the variance in breadth of self-disclosure, $F(8, 512) = 35.770$, $p < .001$, adjusted $R^2 = .349$. Only the motives predicted breadth of self-disclosure. The motivation for or the gratification derived from using OSN encouraged participants to disclose more about themselves over a variety of topics.

4.2.3. Depth of self-disclosure

The full regression model accounted for 43% of the variability of depth of self-disclosure, $F(8,512) = 49.059$, $p < .001$, adjusted $R^2 = .425$. While building new relationships positively influenced the depth of self-disclosure, concern about improper access and unauthorized secondary use of personal information had a negative impact on the construct. Collection of personal information by OSN providers did not negatively affect the depth of self-disclosure.

4.2.4. Honesty of self-disclosure

The hierarchical regression model explained 31% of the variance in honesty of self-disclosure, $F(8,512) = 28.438$, $p < .001$, adjusted $R^2 = .297$. Entertainment and relationship building were the only direct predictors of honesty. Participants who used OSN for entertainment and building new relationships were more likely to be honest in their self-disclosures.

4.2.5. Cultural background and gender

To examine whether cultural background affects information privacy concerns, self-disclosure, and privacy protective measures, independent-sample t -tests were conducted among Indians and US participants. These two countries were selected because the majority of the participants ($n=419$, 80.4%) were either from India ($n=214$, 41.1%) or US ($n=205$, 39.3%) and, more importantly, according to Hofstede's cultural dimensions (Hofstede, 1984) India and US are culturally very different. The mean difference in only collection [$t(386.013) = 2.26$, $p < .001$, $d < .001$], breadth of self-disclosure [$t(375.827) = 2.334$, $p < .001$, $d < .01$] and honesty of self-disclosure [$t(398.253) = 3.066$, $p = .012$, $d < .01$] was statistically significant. The effect size (d) of the t -tests, however, indicated that the mean differences were of little practical importance (Cohen, 1988). The cultural background, therefore, did not affect OSN users' privacy concerns and behaviors.

Independent-sample t -tests were conducted to determine whether there were differences between males and females in information privacy concerns, self-disclosure, and privacy protective measures. The mean difference in collection ($t = 2.20$, $p = .028$, $d = .194$), errors ($t = 2.725$, $p = .007$, $d = .244$), unauthorized secondary use ($t = 2.058$, $p = .040$, $d = .183$), honesty of self-disclosure ($t = 2.129$, $p = .034$, $d = .192$) and privacy protective measures ($t = 3.583$, $p < .001$, $d = .319$) was statistically significant and greater for females than males. The effect size (d) of the t -tests, however, suggested that the mean differences were of little practical importance.

4.2.6. Education level

A one-way multivariate analysis of variance was conducted to determine whether education level affects self-disclosure on OSN. There was a statistically significant difference between the education levels on the combined self-disclosure variables, $F(16, 1567.879) = 2.917$, $p < .0005$; Wilks' $\Lambda = .914$; partial $\eta^2 = .022$. Only amount and depth of self-disclosure, however, contributed to the statistically significant MANOVA model. The difference in the amount ($F(4, 516) = 5.908$, $P < .0005$; partial $\eta^2 = .044$) and depth ($F(4, 516) = 7.998$, $P < .0005$; partial $\eta^2 = .058$) of self-disclosure was statistically significant according to education level. Data are mean \pm standard deviation. The amount (2.22 ± 1.01) and depth (1.78 ± 1.04) of information revealed by PhD holders were minimal, whereas participants with a Master's Degree self-disclosed the most both in amount (3.22 ± 1.13) and depth (3.03 ± 1.18).

To examine whether education level impacts information privacy concern, a one-way multivariate MANOVA was conducted. The difference between the education levels on the combined information privacy concerns variables, $F(16, 1567.879) = 1.778$, $P = .026$; Wilks' $\Lambda = .946$; partial $\eta^2 = .014$, was statistically significant. From the information privacy concern dimensions, only collection did not contribute to the statistically significant MANOVA model. Regarding education levels, the difference in the errors ($F(4, 516) = 3.392$, $P = .009$; partial $\eta^2 = .026$), improper access ($F(4, 516) = 4.278$, $P = .002$; partial $\eta^2 = .032$), and unauthorized secondary use ($F(4, 516) = 3.888$, $P = .004$; partial $\eta^2 = .029$) dimensions of information privacy concern was statistically significant. Data are mean \pm standard deviation. The highest concern level for errors (5.20 ± 0.594), improper access (4.64 ± 0.614) and unauthorized secondary use (4.52 ± 0.532) was reported by participants who hold a PhD degree. Participants with a Master's Degree had the lowest concern level for errors (4.57 ± 0.816) and unauthorized secondary use (3.97 ± 0.769) and participants with an Honours Degree reported to be least concern about improper access (4.22 ± 0.900).

A one-way univariate MANOVA was conducted to determine whether education level affects privacy protective measures. The differences between the education levels on privacy protective measures was not statistically significant, $F(4, 516) = 0.525$, $P = .717$; partial $\eta^2 = .004$.

4.3. Discussion

The aim of Study 2 was twofold. 1- Investigate whether motives to use OSN affect information privacy concern, and 2- Examine whether information privacy concerns affect privacy behaviour in OSN (i.e. how OSN users self-disclose and use privacy protective measures).

The findings of Study 2 have several implications for research. First, the relationship between motives for or gratification derived from using OSN and information privacy concern was of little practical importance. We observed a weak association between the two constructs, suggesting that the desire to use OSN or the satisfaction obtained from using it only has a marginal effect on the users' point of view about privacy concerns. In other words, gratification obtained from OSN use does not lead users to adopt either a lax or a strict attitude towards information privacy. A plausible explanation for this outcome is that motives for using OSN do not necessarily conflict with privacy concerns. The findings of Lin & Liu (2012) demonstrate no link between privacy concerns and motive for using Facebook. It appears that being motivated to use OSN and the need for maintaining information privacy are not on a continuum, rather they are independent dimensions. Regardless of being, or not being, concerned about privacy, most people continue to use OSN. The privacy-concerned users, however, might employ different strategies to fulfil their privacy risk avoidance need (Young & Quan-Haase, 2013). A contrasting result in Tsoi & Chen (2011), shows that privacy concern has a negative impact on motives for using OSN among French users. The users with high privacy concerns were less motivated to use OSN to maintain relationships, meet new people, share information and join in activities.

Second, the results regarding the relationship between information privacy concerns and self-disclosure imply that privacy concern has only a limited impact on self-disclosure and is a weak predictor of it. This, to some extent, affirms the findings of Christy, Zach, & Tommy, (2015) and Hallam & Zanella (2017) who found no link between users' perceived privacy risks and their self-disclosure behaviour. However, most of the previous OSN self-disclosure research found a link between the two constructs, such that privacy concern negatively impacts self-disclosure. Our finding, thus, calls for a reconsideration of the common belief that privacy concern hinders self-disclosure.

Third, the motives for OSN use, compared to information privacy concerns, had a significant impact on self-disclosure. We observed strong to moderate and positive association between the motives and self-disclosure dimensions, whereas the association among all dimensions of information privacy concern and self-disclosure were weak and of little practical importance. Users' preference for immediate benefits over potential future risks provides a plausible explanation for our finding (Acquisti & Grossklags, 2005). Gratification gained from using OSN is tangible and instantaneous, whereas the risk of self-disclosure seems potential and distant. The motivator and inhibitor factors for self-disclosure are not weighted equally in users' assessment. OSN users tend to place more value on the perceived benefits of self-disclosure than on the potential risks of sharing personal information (Lee, Park, & Kim, 2013). Another possible reason for this outcome is the nature of OSN design that encourages users to reveal more information. In fact, the commercial success of OSN depends on the volume of data that users create (Krasnova, Spiekermann, Koroleva, & Hildebrand, 2010). To be able to participate in OSN, some personal information has to be provided. Although it is possible to provide false information, providing falsified information is not an expected norm and behaviour in OSN settings (Tufekci, 2008; Williams, 2008). Moreover, because of the presence of real-life friends and family members on users' OSN network, revealing untruthful information would have negative consequences for the users. Overall, our findings indicate that motives or gratification gained from using OSN are encouraging factors for self-disclosure. This is in line with previous research on the relationship between self-disclosure and motives for using OSN (e.g. Christy, Zach, & Tommy, 2015; Huang, 2016; Krasnova, Spiekermann, Koroleva, & Hildebrand, 2010; Yu, Hu, & Cheng, 2015).

Fourth, the results suggest that concern over information privacy has a positive influence on users' privacy protective measures. Users with concerns about information privacy took measures to protect their profiles and were cautious in using OSN. Therefore, we did not observe any dichotomy between privacy concerns and privacy protective measures. Also considering the results regarding the relationship between information privacy concerns and self-disclosure, no disparity was apparent between privacy attitudes and privacy behaviors. Our results, thus, do not support the privacy paradox or the gap among privacy attitudes and behaviors. The findings concerning the relationship between attitude to privacy and actual privacy behaviour in OSN are mixed. Consistent with the outcomes of our study, Heravi, Mubarak, & Choo, 2015; Mohamed & Ahmad (2012) and Young & Quan-Haase (2009), for example, found that users who are more concerned about information privacy use privacy measures. In contrast, Acquisti & Gross (2006) and Tufekci (2008) elaborated on the distinction among stated privacy attitude and actual privacy behaviour of Facebook and Myspace users.

5. Conclusion

This research was conducted through carrying out two studies. In Study 1, drawing on the uses and gratification theory and the use of content analysis, the predominant motives for using OSN were identified. In Study 2, APCO (Antecedents → Privacy Concerns → Outcomes) conceptual framework was employed. As antecedents of privacy concerns, the impact of the motives identified on users' privacy concerns was tested. The outcomes of privacy concerns were assessed by examining the relationship between privacy concern and privacy behaviour. Privacy behaviour was investigated using two factors: self-disclosure, and privacy protective measures (e.g. applying privacy settings, being cautious about joining groups and accepting friending requests).

In order of prevalence, the motives for using OSN were identified in Study 1 as: 1-relationship maintenance, 2-entertainment, 3-relationship building, and 4-information seeking. The same sequence for these motives was adopted in Study 2. Exploring the mean value of the used motives in Study 2 confirmed that the strongest motivation for using OSN is to maintain current relationships.

Information privacy concern was examined by four dimensions: collection, errors, improper access and unauthorized secondary use. Among these dimensions, participants were most concerned about improper access and least concerned about collection. The regression analysis indicated that users who mainly used OSN for entertainment or establishing new relationships were more likely to be concerned about different aspects of information privacy. In contrast, those who utilised OSN to seek information seemed not to be concerned about privacy. These outcomes should be considered in the light of the weak association between the two constructs and the weak predictability of all dimensions of information privacy arising from the motives.

Self-disclosure was examined through four dimensions: amount, breadth, depth and honesty. Among the self-disclosure dimensions, the highest and the lowest degree of self-disclosure were related to breadth and depth of self-disclosure, respectively. The regression analysis revealed that only unauthorized secondary use of information privacy negatively impacts all dimensions of self-disclosure. While error and improper access did not predict any dimensions of self-disclosure, collection served as a direct predictor of amount and breadth of self-disclosure with a positive predictive value. It appears that users consider collection of personal information by OSN providers is the necessary privacy cost of benefiting from self-disclosure. These findings, however, should be interpreted while taking into account the weak association between the two constructs and the weak predictive value of information privacy concern for self-disclosure.

The outcomes regarding the impact of information privacy concerns on privacy protection behaviour suggested that users' who were concerned about errors and improper access of information privacy were more likely to adopt a conservative attitude in using OSN. This research contributes to the extant literature by revealing that the effect of the motives for using OSN on information privacy concern is insignificant; information privacy concern does not serve as an important inhibitor of self-disclosure; motives for OSN use fosters self-disclosure; and there is no gap between privacy concern and privacy behaviour.

This research also has limitations that suggest future research directions. First, we relied on self-reported method to collect data. Although this has been a common approach in previous OSN research, the discrepancies between self-reported and actual behaviour (Ntlatywa, Botha, & Haskins, 2012) might affect the generalizability of our findings. Some survey participants might have tended to answer questions in a way that seems socially desirable (e.g. being concerned about privacy, providing less personal information). Therefore, other methods, such as profile analysis or experimental studies may measure privacy behaviour more accurately. Future research could use these methods to examine actual privacy protection and self-disclosure behaviour in OSN settings. Second, we did not limit our study to a specific OSN. Although this enabled us to assume a general understanding on privacy attitudes and behaviors in the online social networking sphere, the results may not be exactly the same for all OSNs. While the practical application of all OSNs is to facilitate connection and interaction among people, their scope can be different, such as general socialization or professional networking. It is, therefore, possible that users demonstrate dissimilar behavior on different OSNs (Zhitomirsky-Geffet & Bratspiess, 2016). Future research could examine and compare privacy concerns and behaviors on different OSNs. Finally, we examined four dimensions of information privacy concerns that had been identified in previous research. Additional research might consider identifying alternative dimensions for information privacy concern in the OSN context.

Appendix A

Table 1

Correlation between gratifications/motives and privacy concerns

	1	2	3	4	5	6	7	8
1-Collection	1							
2-Errors	.710**	1						
3-Improper access	.343**	.727**	1					
4-Unauthorized secondary use	.744**	.815**	.687**	1				
5-Entertainment	.028	.082	.116**	.026	1			
6- Info seeking	.104*	.167**	.152**	.083	.659**	1		
7- RB	.108*	-.013	-.110*	-.079	.492**	.572**	1	
8- RM	.043	.153**	.155**	.056	.603**	.571**	.446**	1

Note: ** $p < .01$, * $p < .05$, RB = relationship building, RM = relationship maintenance

Table 2

Correlation between Age, Gender, privacy concerns and self-disclosure

	1	2	3	4	5	6	7	8	9	10
1-Age	1									
2- Gender	.070	1								
3-Collection	-.020	.094*	1							
4-Errors	.123**	.118**	.710**	1						
5-Improper access	.201**	.051	.343**	.727**	1					
6-Unauthorized secondary use	.092*	.089*	.744**	.815**	.687**	1				
7- SD Amount	-.050	.058	.013	-.099*	-.187**	-.191**	1			
8- SD Breadth	.041	.085	.039	.091*	.083	-.006	.676**	1		
9- SD Depth	-.147**	-.013	-.008	-.184**	-.284**	-.244**	.830**	.521**	1	
10- SD Honesty	.066	.094*	-.020	-.014	-.009	-.082	.711**	.637**	.638**	1

Note: ** $p < .01$, * $p < .05$, SD = self-disclosure

Table 3

Correlation between motives and self-disclosure, and privacy protection behaviour

	1	2	3	4	5	6	7	8	9
1-Entertainment	1								
2- Info seeking	.659**	1							
3- RB	.429**	.572**	1						
4- RM	.603**	.571**	.446**	1					
5- SD Amount	.486**	.469**	.626**	.474**	1				
6- SD Breadth	.458**	.454**	.480**	.507**	.676**	1			
7- SD Depth	.353**	.371**	.598**	.303**	.830**	.521**	1		
8- SD Honesty	.449**	.414**	.452**	.446**	.711**	.637**	.638**	1	
9- PPM	.199**	.299**	.001	.290**	.020	.144**	-.093*	.148**	1

Note: ** $p < .01$, * $p < .05$, RB = relationship building, RM = relationship maintenance, SD = self-disclosure, PPB= privacy protective measures

Appendix B - Survey measures

Entertainment

- I have fun interacting with others through OSN. (Heravi et al., 2015)
- I just like use it. (Papacharissi and Rubin, 2000)
- I enjoy using OSN. (Heravi et al., 2015)
- It is entertaining. (Papacharissi and Rubin, 2000)
- I use OSN to have fun. (Sheldon, 2008a)

Information seeking

- I use OSN to see what people have put as their status. (Joinson, 2008)

By using the OSN I find out what's going on. (Heravi et al., 2015)
 By using the OSN I become aware of what my friends are up to. (Heravi et al., 2015)
 I use OSN to learn about social events. (Nyland and Near, 2007)
 I use OSN to see what is out there. (Papacharissi and Rubin, 2000)
 I use OSN to look for information. (Papacharissi and Rubin, 2000)

Relationship building

I use OSN to make new friends. (Foregger, 2008)
 I use OSN to meet new people like me. (Barker and Ota, 2011)
 I use OSN to see people with a similar background. (Barker and Ota, 2011)
 I use OSN talk to business and professional contacts. (Recchiuti, 2003)
 I use OSN to meet interesting people. (Park et al., 2009)
 I use OSN to network with new people. (Heravi et al., 2015)

Relationship maintenance

I use OSN to share information with my friends and family who do not live near me. (Hollenbaugh, 2011)
 I use OSN to get in touch with people I know. (Sheldon, 2008a)
 I use OSN to communicate with my friends. (Sheldon, 2008a)
 I use OSN to reconnect with people you've lost contact with. (Joinson, 2008)
 I use OSN to keep in touch with my friends/family. (Papacharissi and Mendelson, 2011)

Collection

I am concerned that my OSN is collecting too much personal information about me. (Smith et al., 1996)
 I am concerned that people I do not know obtain personal information from my OSN activities. (Buchanan et al., 2007)
 I am concerned that information about me could be found through my OSN friends' page (Heravi et al., 2015)
 It bothers me to provide personal information on so many OSNs. (Smith et al., 1996)
 I am concerned that personal information could be made available to unknown individuals or companies without my knowledge. (Dinev and Hart, 2004)
 I am concerned that personal information could be made available to government agencies. (Dinev and Hart, 2004)

Errors (developed by the authors)

I am concerned that the protection against deliberate and accidental privacy breaches in my OSN is inadequate.
 I am concerned that the privacy settings provided by my OSN are not sufficient.
 I am concerned that even when I restrict my profile, some people may have access to it.
 OSN providers should have better procedures to detect malwares and viruses.
 OSN providers should always check the effectiveness of their privacy and security policies.
 OSN providers should have better procedures to detect any technical flaws that might compromise users' privacy.

Improper access

OSN providers should devote more time and effort to prevent unauthorised access to users' personal information. (Smith et al., 1996)
 OSN providers' databases containing users' personal information should be protected from unauthorised access—no matter how much it costs. (Smith et al., 1996)
 OSN providers should take more steps to ensure that unauthorised people cannot access personal information stored in their databases. (Smith et al., 1996)
 OSN providers should take more steps to assure compliance with relevant privacy and data protection legislations.
 (Developed by the authors)

Unauthorized secondary use

I am concerned about submitting personal information on OSN, because of what others might do with it. (Dinev and Hart, 2004)
 I am concerned about submitting personal information on OSN, because it could be used in a way I did not foresee. (Dinev and Hart, 2004)
 OSN providers should not use personal information for any purpose unless it has been authorized by the individuals who provided the information. (Smith et al., 1996)
 OSN providers should never sell users' personal information to other companies. (Smith et al., 1996)
 OSN providers should never share users' personal information with other companies unless it has been authorized by the users who provided the information. (Smith et al., 1996)
 I am concerned that personal information could be inappropriately used. (Dinev and Hart, 2004)

Privacy protection behavior

I am careful about whom I friend. (Hoy and Milne, 2010)
 I am careful about what groups I join. (Hoy and Milne, 2010)
 I control my privacy settings so that only my friends can see my profile. (Hoy and Milne, 2010)
 I provide limited personal information on my profile. (Heravi et al., 2015)
 I am familiar with the privacy settings. (Developed by the authors)
 I'm careful about the pictures I post of myself on my profile. (Hoy and Milne, 2010)

Self-disclosure: Amount

When I have something to say, I like to share it on my social networking website. (Krasnova et al., 2010)
 I keep my friends updated about what is going on in my life through the OSN. (Krasnova et al., 2010)
 I usually write fairly long posts about myself. (Hollenbaugh and Ferris, 2014)
 I often write about myself on OSN. (Hollenbaugh and Ferris, 2014)
 I often discuss my feelings about myself on OSN. (Wheelless, 1978)

Self-disclosure: Breadth

My posts on OSN (e.g. Facebook) range over a variety of topics. (Hollenbaugh and Ferris, 2014)
 Once I get started writing on OSN (e.g. Facebook), I move easily from one topic to another. (Hollenbaugh and Ferris, 2014)
 My posts on OSN (e.g. Facebook) address a variety of subjects. (Hollenbaugh and Ferris, 2014)

Self-disclosure: Depth (Wheless, 1978)

I intimately disclose who I really am, openly and fully on OSN.
 I often disclose intimate, personal things about myself on OSN without hesitation.
 I feel that I sometimes do not control my self-disclosure of personal or intimate things I tell about myself on OSN.
 Once I get started, I intimately and fully reveal myself in my disclosures on Facebook.

Self-disclosure: Honesty

My posts about my own feelings, emotions, and experiences are always accurate self-perceptions. (Wheless, 1978)
 I am honest in my self-disclosures in my profile and in my posts. (Varnali and Toker, 2015b)
 My disclosures on OSN are completely accurate reflections of who I really am. (Wheless, 1978)
 I always feel completely sincere when I reveal my own feelings and experiences on OSN. (Wheless, 1978)
 People can know me from my profile and posts on OSN. (Developed by the authors)

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The degree of privacy concern is not related to the reasons why people use OSN

Privacy concerns did not inhibit self-disclosure on OSN

Motives for using OSN fostered self-disclosure

Inconsistency between privacy attitude and privacy behaviour in OSN was not supported

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