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Does Privacy Have Any Impact on Self-Disclosure? A Systematic Review of Relevant Studies

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Abstract:
The study aims to systematically collect and review literature that investigates the impact of privacy on self-disclosure using Facebook. Another purpose of the review is to identify the theories/ models applied/tested, the software used for data analysis in the reviewed research, the quality of the reviewed studies, and the country's leading in publishing on the topic. The research also intends to show privacy-related aspects of the published studies. Four databases, i.e., Scopus, WoS, LISTA, and Google Scholar, were used for the purpose of data collection and review the literature. The review was conducted using PRISMA guidelines. The findings confirm that most reviewed studies found a negative impact of various privacy aspects on self-disclosure on social media sites. The review identified that Privacy Calculus Theory was the most frequently tested in the reviewed studies. The majority of the reviewed literature quality scores ranged between 12 to 13. It was also found that Privacy Concerns were the most discussed in the research reviewed in the study. It was found that most of the literature was produced in the years 2023 and 2018 and that more than 85% of the published studies were collaborative work that have been published by two or more authors. This is the first systematic review that identified the most used theories on the topic in the reviewed research. This is a unique study that identified the privacy aspect frequently discussed in the literature in the area.

Keywords: Systematic literature review; PRISMA; Self-disclosure; Social networking sites, Personal information sharing; Information behavior

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Introduction

The invention of the World Wide Web (WWW) revolutionized the information-sharing pattern. Around thirty years ago, some large multinational companies and a few academic and research institutes started using the Internet, which has now become an effective instrument for information sharing in a very fast way (Leiner et al., 2003). In the year 2000, many social networking sites grew and transformed the way of

communication among people and communities, and shaped groups for information sharing on common interests (Edosomwan, Prakasan, Kouame, Watson, & Seymour, 2011). As time passed, various social networking sites emerged and became popular. Social networking sites (SNSs) are places for people to socialize over the internet, where they can generate their profiles to invite and draw the attention of their friends, family, peers, and common people. The SNS users are able to share their personal information on various online platforms to make new friends and reconnect with former colleagues and friends (Gross & Acquisti, 2005). With the passage of time, SNSs, with diversified functionalities, have become an important place for people from every walk of life, and these sites may affect people's cognitive and emotional experiences (Gong et al., 2023). Social networking sites are essential for reaching out to the widest audience as these sites make it easy for people to connect and extend invitations to one another (Khan, Alhathal, Alam, & Minhaj, 2023). The SNSs' importance has been proven in health-related information, particularly during COVID-19. Faruk et al. (2022) opined that SNSs were crucial in the spread of pandemic-related news during the outbreak.

Although a significant number of researchers have reported the benefits of using social networking sites in their studies (Mäntymäki & Islam, 2016; Meier & Schäfer, 2018; Rao & Kalyani, 2022). That includes various fields, particularly education, social interaction, and business. For example, Lottering (2020) considered social media useful for increasing engagement for educational purposes as this enhances student engagement, which eventually results in improved academic performance. Similarly, Shieh & Nasongkhla (2024) reported that social media use enhances students' access to information, and they can search for their required information easily. On the other hand, (Popovac, Fine, & Hicken, 2023) relates social media use to social interaction and a sense of belonging as it fosters social support. On the contrary, some researchers have identified some of the negative sides of using social networking sites. For example, Jawabreh & Khasawneh (2023) stated that the increasing demand for social networks from various segments of society confirms the important role social networks play in introducing hate speech among their users. This led to the creation of a study that aims to determine the role social networking sites play in spreading hate speech among students. Similarly, SNSs' explosive growth has had a significant negative impact on adolescents' social experiences and overall well-being. Pilatti et al. (2021) also mentioned that using social networking sites is a very common behavior that might become maladaptive for certain people. Finding the factors linked to inappropriate SNS use has attracted increasing attention.

Self-disclosure is something that is relevant to sharing people's individual and personally identifiable information across multiple types of web-based systems (Ball, Ramim, & Levy, 2015). Facebook was one of them, which was launched by Mark Zuckerberg with other co-founders on February 4, 2004. Facebook emerged as a rapidly growing platform, and it got the attention of the people so quickly that over one million people were active users in the first three months of its launch. (Facebook, 2020). Besides this, the invention of basic mobile phones and smartphones made it easy for users to share their information promptly without opening their personal computers or laptops. According to the latest statistics, Taylor (2023) forecasted that the number of smartphones will be more than 7.7 billion in the world by 2028, as it already reached 6.4 billion in 2022.

China, India, and the USA were the top three countries having smartphone mobile network subscriptions, respectively.

In the 21st century, privacy issues have grown significantly, especially as social networking sites like Facebook have gained popularity. The collection and use of personal information on these social network sites have raised ethical and security concerns, necessitating robust privacy protection mechanisms (Xu, Liu, & Hou, 2024). There have been significant privacy challenges for social media users, particularly regarding personal information and privacy settings on SNS. The growth of social media tools like Facebook has increased privacy issues by putting users at risk for identity theft and cyberstalking (McHatton & Ghazinour, 2023). Since 2006, the growth of social networking sites like Facebook has exacerbated these privacy concerns (Saura, Palacios-Marqués, & Ribeiro-Soriano, 2023). With the gradual increase in social media, social networking sites developed complex governance structures through application programming interfaces (APIs). In 2007, Facebook APIs evolved into a sophisticated governance structure, enabling it to enforce platform policies and data strategies. That eventually made it easier to collect and use the user data on a scale, especially with the Graph API and other relevant permissions. It shaped the data strategies of both Facebook and third-party developers (Helmond, van der Vlist, Burkhardt, & Seitz, 2021). Privacy concerns are one of the most common among them (Becker & Pousttchi, 2012; Lai & Shi, 2015; Malekhosseini, Hosseinzadeh, & Navi, 2018; Srivastava & Roychoudhury, 2021; Xu, Michael, & Chen, 2013). Various researchers have examined the impact of privacy concerns on self-disclosure and published their works (Jeong & Kim, 2017; Kelly, Kerr, & Drennan, 2017; Lin & Liu, 2012; Tan, Qin, Kim, & Hsu, 2012). Some studies have mentioned that privacy concerns have been an antecedent mostly (Lankton, McKnight, & Tripp, 2019; Salehan, Mousavizadeh Kashipaz, & Xu, 2013; Tan et al., 2012). However, some studies have also pointed to the other side and mentioned that privacy concerns could not be considered an antecedent of PISB (Van den Broeck, Poels, & Walrave, 2015). Several studies have been conducted to see the impact or influence of privacy concerns on self-disclosure (Bevan-Dye & Akpojivi, 2016; Chen & Marcus, 2012; Malik, Hiekkanen, Dhir, & Nieminen, 2016; Martínez, Herrero, & García-de los Salmones, 2020; Oghazi, Schultheiss, Chirumalla, Kalmer, & Rad, 2020; Sharif, Soroya, Ahmad, & Mahmood, 2021). Whereas some researchers have investigated other aspects of privacy. For example, Kroll & Stieglitz (2021) have studied the perceived privacy risk with the help of a conceptual model. Similarly, Wu (2019) has investigated the effect of privacy behavior, privacy management activities, and perceived privacy control using a conceptual model. Some authors worked on privacy knowledge and awareness and privacy-seeking behavior (Coe et al., 2012; Malik et al., 2016).

Over the last few years, self-disclosure has been discussed in research studies due to various advantages linked with it (Sharif et al., 2021). However, it was noted that no systematic review has been conducted on the relationship between privacy and self-disclosure on social networking sites so far. Hence, this study aims to review the published literature about the relationship between privacy and self-disclosure on social networking sites (Facebook) in a systematic way using the standard PRISMA guidelines.

Research Questions

The following are the research questions to be answered through this study:

1. What is the impact/effect of privacy on self-disclosure

on social networking sites (Facebook)?
2. Which aspects of privacy have been covered in the reviewed literature?
3. What kinds of theories have been applied in the reviewed studies?
4. What is the quality level of the reviewed literature?
5. Which country is leading in terms of publishing on the topic?

Significance of the Study

It is important to let social media users know about the impact of privacy on self-disclosure to assess the user's behavior on social media. This helps raise social media users' awareness, reduces the hazards associated with revealing personal information, and helps understand how privacy affects self-disclosure. Social media users feel more comfortable when they intend to disclose their personal information if they are assured of the privacy of their personal information, which eventually fosters close relationships and communication. Social media users' trust and desire to divulge personal information are highly predictable by privacy concerns (Martins, Ferraz, & Fagundes, 2024). Hence, keeping in view Facebook use, particularly among youngsters, it is important to know how privacy concerns are relevant to users.

Methodology

This study seeks to comprehensively gather and analyze the existing literature on the impact of privacy on self-disclosure on social networking sites (Facebook). This study applied the Preferred Reporting Items for the Systematic Review and Meta-analyses (PRISMA) guidelines to extract the relevant studies. PRISMA is being used as a basis for reporting systematic reviews of other types of research (Moher et al., 2015). Although the PRISMA guidelines were originally made up for healthcare research, now it has been used widely in social sciences subjects such as library and information science, and information management (Ali & Warraich, 2021; Ashiq, Usmani, & Naeem, 2022; Mahmood, 2017; Safdar, Batool, & Mahmood, 2020).

Search strategy

We searched four databases, namely: SCOPUS, Web of Science, Google Scholar, and Library, Information Science and Technology Abstracts (LISTA), to extract the relevant literature for this review. The authors used the following general query on October 26th, 2023, to collect literature for the study:

Privacy AND ("personal information sharing" OR "self disclosure" OR self-disclosure OR "personal information disclosure") AND ("social media" OR "social networking sites" OR SNS OR Facebook)

The query identified a total of 518 results from these four databases. The investigators downloaded the records in EndNote (RIS format) and screened the data using EndNote and Microsoft Excel applications. After eliminating 97 duplicate records, it came 421 studies. Within these studies, five studies were produced in non-English languages (Spanish, French, Turkish, and Malay). Furthermore, five more studies were eliminated as the full text of these studies was not accessible to the authors. The remaining potential studies (n=416) were skimmed carefully. After reading titles and abstracts, the investigators excluded 391 records as those covered only one aspect of the review's variables (either privacy, self-disclosure, social networking sites or Facebook). Finally, 20 studies could qualify to fulfill the review's eligibility criteria. The researchers recorded the characteristics of the reviewed studies in Microsoft Excel.

Inclusion and exclusion criteria

This study included those publications that had investigated the impact/effect of privacy on self-disclosure using social networking sites, especially Facebook. No restriction on publishing year had been applied to the studies. However, the study did not include books, book chapters, or book reviews. The studies published in languages other than English have also been considered ineligible and, hence, not included in the review. Finally, a total of 20 relevant studies are included and examined in this review after excluding duplicated, irrelevant (covering only one aspect of this study, i.e., only privacy, only self-disclosure, or only social networking sites, non-reporting of relationship-related values), and non-English studies (Figure 1).

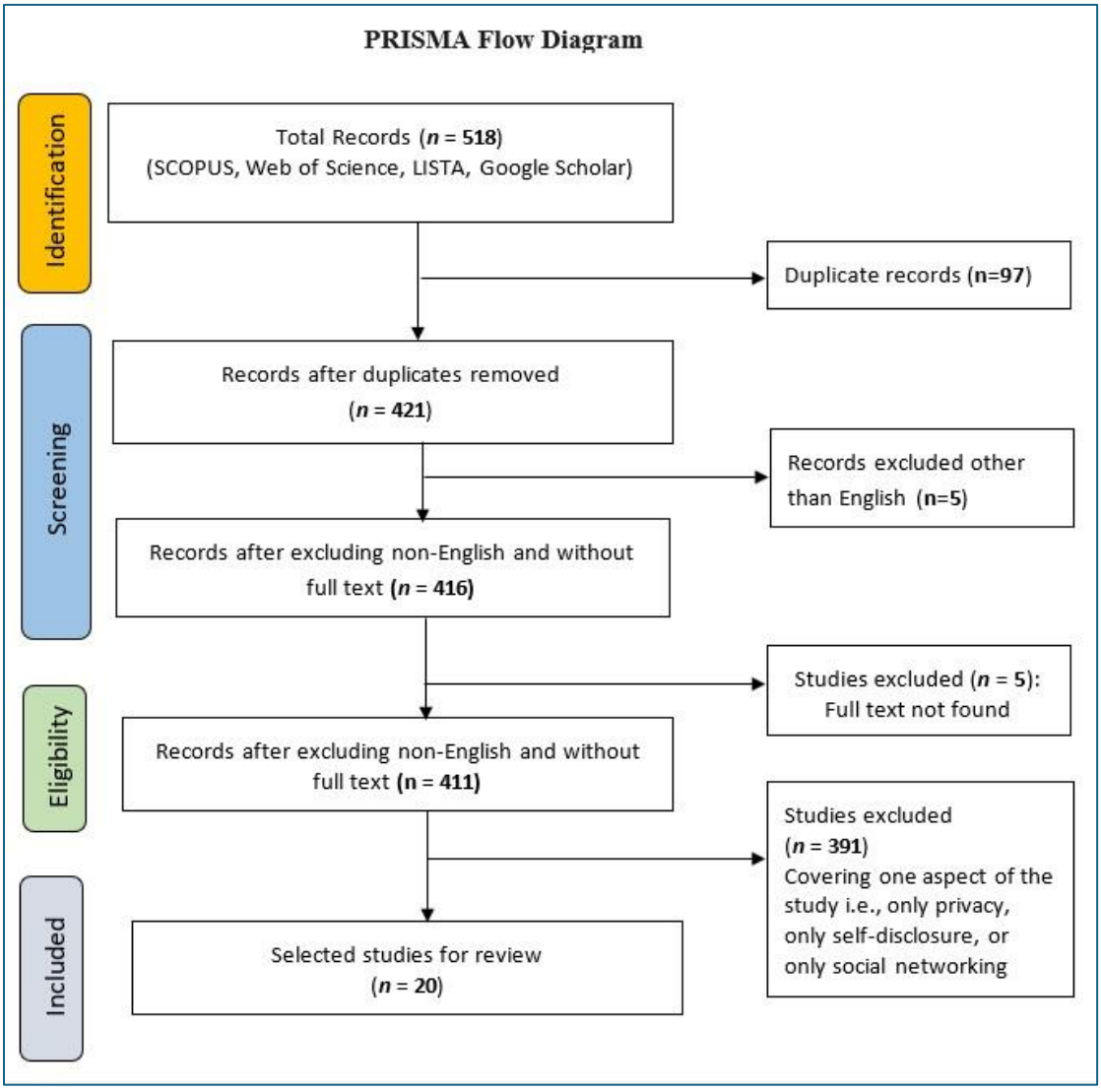

Figure 1. PRISMA flow diagram

Quality Assessment

Quality assessment of published literature is not an easy task (Kitchenham, 2004). This is the reason, perhaps, that plenty of guides are available in the literature that are intended to facilitate researchers in assessing the quality of the research (Boynton & Greenhalgh, 2004; Khan et al., 2011; Kmet, Cook, & Lee, 2004). However, many social scientists have used Boynton & Greenhalgh, 2004 guide to assess the literature's quality (Safdar, Ur Rehman, Yousaf, & Ashiq, 2023). Therefore, the researchers used Boynton and Greenhalgh (2004) guide to assess the quality of the research reviewed in this study. The authors assessed the quality of the studies from six perspectives (questions and design, tools for data collection, sampling, response, presentation, and analysis). The maximum score of a study could be 13 if it meets all the criteria. Nevertheless, the quality assessment score of the chosen studies ranged from 9 to 13. Most of these investigations acquired a score of 12 (n=9) or 13 (n=5). This demonstrates that the research done on the issue being studied is of good quality (Table III).

Results

To conduct this study, a careful and extensive search strategy was formulated that would extract the best amount of related scholarly works. relevant articles. Finally, we included 20 highly relevant studies in this systematic review, fulfilling the inclusion criteria.

Geographical distribution of the selected studies

The results presented in Figure 2 highlighted that most of the literature on the topic has emerged from developed nations. Out of 20 articles included in this review, China (including Hong Kong) has been at the top, with six being produced from this country. It is important to note that all six articles were collaborative work. Authors from the United States contributed four papers written by more than one author. One article was jointly authored from Hong Kong and the United States. Furthermore, three articles were produced in collaboration with other countries' authors, one from China (Hong Kong), which was jointly authored by an American author, and one from Malaysia and Indonesia each, which was joint authorship of Iraqi and British researchers, respectively. Three articles were produced in Germany; one of them was single authored, whereas the other two were written by more than one author. In comparison, the rest of the included articles were authored from Japan, Ghana, Finland, and South Africa.

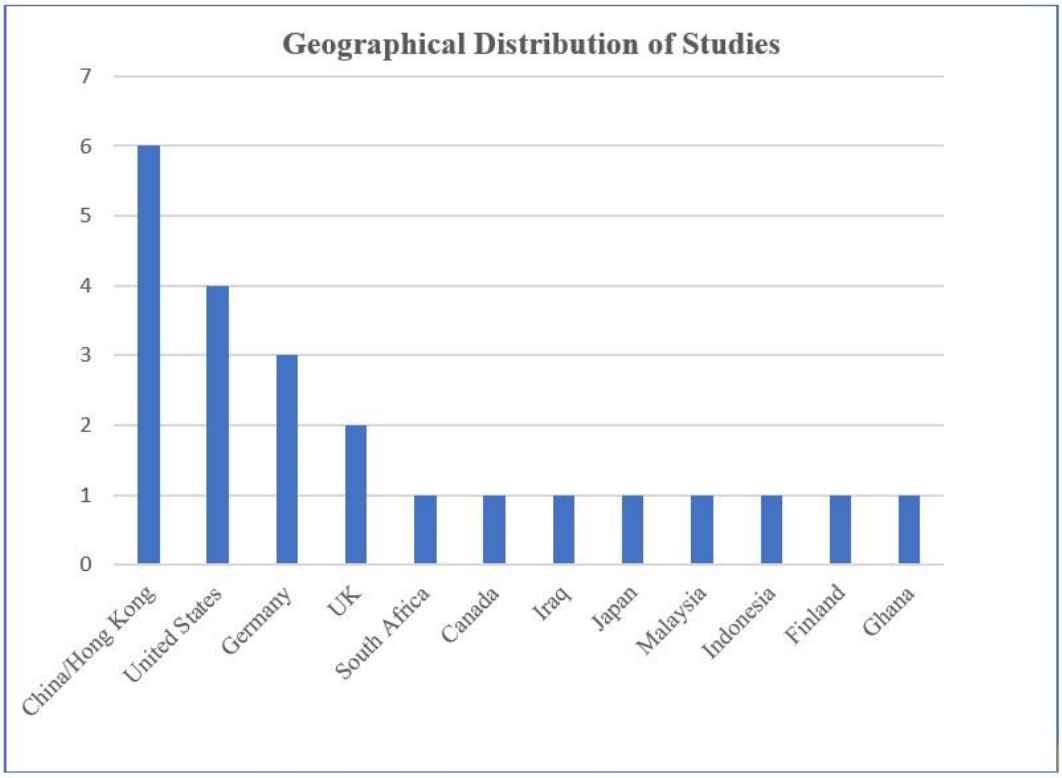

Figure 2. Geographical distribution of the studies

Characteristics and attributes of the selected studies

Table I presents an overview of the research studies that were included after all screenings. The results showed that all selected studies were conducted in the last ten years (2014 to 2023). The most frequent years were 2023 (n=4), followed by 2021 and 2018 (n=3). The years 2020, 2017, and 2016 were productive years, with 2 studies each year, whereas one study for each year was produced in 2022, 2019, 2015, and 2014. The results further show that all, except three (n=17) studies, were published collaboratively with two or more than two authors. The authorship collaboration pattern shows that one article was written by six authors, followed by another by five authors. Most collaborative work was evidenced three times when five authors wrote articles jointly. Furthermore, the selected articles were published in 17 journals. Two articles each were published in 'Computers in Human Behavior', 'Internet Research', and 'Journal of Computer-Mediated Communication', respectively. The rest of the articles (n=14) were published in fourteen different journals. Besides, various commercial publishers (n=14) published the selected articles. Emerald was the most popular publisher with four articles, followed by Routledge with three and Elsevier with two articles each. The rest of the articles were published by eleven different publishers' journals.

The methodological nature of the selected studies (Table I) showcases that the majority (n=18) of the studies used the quantitative method. For the data collection, most studies (n=18) used the survey method to collect the data. The majority (n=14) of the reviewed research

used adapted tools; three adopted the tools, and one developed them to collect data. However, two papers did not report on this aspect of the study.

Since this study was conducted to identify the impact of privacy on self-disclosure on social networking sites in general, the population of all studies was Facebook users. The population of these studies included SNS users of different geographies, i.e., China, including Hong Kong (n=6), the United States (n=4), Germany (n=3), and the United Kingdom (n=2). Canada, South Africa, Iraq, Japan, Malaysia, Indonesia, Finland, and Ghana (n=1 each). The sample size of the selected studies varied from a maximum (n=2,739) to a minimum (n=166). Regarding sampling techniques, thirteen studies didn't report the technique they used for sampling. However, the most used sampling technique has been convenient (n=4). Whereas, snowball, purposive, and stratified sampling were used in one study each for sampling.

Impact of privacy concerns on Self-Disclosure

The results of the systematic review (Table I) confirmed that a majority (n=12) of the reviewed studies found a negative impact/effect of privacy aspects, particularly privacy concerns, privacy risk, and privacy awareness, on self-disclosure. On the other hand, seven studies reported that privacy had an impact/effect on self-disclosure, of which four reported a high impact. However, the review also found that some (n=5) studies did not report any impact/effect of privacy concerns on self-disclosure. However, one study reported that privacy concerns hardly impacted self-disclosure. Three studies that used various aspects of privacy as variables, for example, Wirth, Maier, Laumer, & Weitzel (2022) used Privacy Risks as the independent variable and Privacy Concerns as the mediation variable. Similarly, Wu (2019) used Privacy Management and Perceived Privacy Control as variables. Whereas Ampong et al. (2018) used three different privacy variables, i.e., Privacy Awareness, Privacy Concerns, and Privacy Risk. Similarly, two aspects of self-disclosure, i.e., self-disclosure amount and self-disclosure depth, were used as the dependent variable (Cao, Luo, & Hu, 2024; Gruzd & Hernández-García, 2018; Rehman, Manickam, & Al-Charchafchi, 2023).

Most of the studies included in this review have applied the beta (β) regression coefficient to gauge the impact/effect of the independent/mediation variable (Privacy) on the outcome variable (Self-Disclosure). The values of the regression coefficient beta (β) range from þ1 to 1. If the value of beta (β) shows a positive result, it indicates that the impact/effect of the independent/mediation variable on the dependent variable is positive. Similarly, if the value of beta (β) is negative, it would have resulted in the same manner. However, in the case of the value of beta (β) showing 0, there would be no effect of an independent variable on the dependent one. (Rafique & Mahmood, 2018) have categorized the (β) coefficient values into three levels (degrees) – high-level degree (range ± 0.50 to ± 1); mid-level degree (range ± 0.30 to ± 0.49); and low-level degree (range ± 0.29 and less). Moreover, few studies (3) did not report the values to confirm the impact of privacy concerns on self-disclosure. However, such studies shared that the impact/effect was positive/negative in their report writing. In this review, as Table I shows, privacy concerns had a significantly negative effect on self-disclosure in 14 studies with a beta coefficient value between -.47 to 0.352. Among these studies, 9 studies (Ampong et al., 2018; Bevan-Dye & Akpojivi, 2016; Cao

et al., 2024; Gong, Zhang, Chen, Cheung, & Lee, 2020; Kroll & Stieglitz, 2021; Morimoto, 2023; Rehman et al., 2023; Wu, 2019; Zhang & Fu, 2020) had high, three studies (Bélanger, Crossler, & Correia, 2021; Gruzd & Hernández-García, 2018; Malik et al., 2016) moderate, three studies (Eitiveni, Hidayanto, Dwityafani, & Kumaralalita, 2023; Osatuyi, Passerini, Ravarini, & Grandhi, 2018; Yuchao, Ying, & Liao, 2021) showed a low, whereas five studies (Cheung, Lee, & Chan, 2015; Hallam & Zanella, 2017; Liu, Yao, Yang, & Tu, 2017; Taddicken, 2014; Wirth et al., 2022) mentioned non-significant effect of privacy concerns on self-disclosure. Despite a few studies that either did not share the same values or did not find a significant impact, it is evident from the study's results that more than half of the reviewed studies (n=12) identified privacy concerns as having a negative impact on self-disclosure.

Table I

Attributes of the selected studies and calculated statistics

S. No.	Author(s)	Country	Research method	Data collection instrument	Scale status	Population type	Privacy Variable (IV/MV)	Dependent variables	Sampling technique	Sample size	Statistics used
1	Rehman et al. (2023)	Malaysia; Iraq	Quantitative	Paper and online survey	Adopted	FB users of Universiti Sains Malaysia	Privacy concerns (IV)	Self-disclosure amount; Self-disclosure depth	Not reported	n = 225	PC→ SD-amount (β=-0.213, p=0.000); PC→ SD-depth (β=-0.232, p=0.000)
2	Eitiveni et al. (2023)	Indonesia; U.K.	Quantitative	Online survey	Adapted	LinkedIn users in Indonesia	Privacy concerns (MV)	Self-disclosure	Not reported	n = 661	0,080*
3	Cao et al. (2023)	China	Quantitative	Online survey	Adapted	Chinese social media users	Privacy concern (MV)	Self-disclosure amount; Self-disclosure depth	Convenience	n = 542	PC →SD amount (β = −0.383, p < 0.001); PC → SD depth (β = −0.385, p <0.001)
4	Morimoto (2023)	Japan	Quantitative	Online survey	Adapted	Japanese consumers	Privacy concerns (IV)	Attitude toward personal information disclosure	Not reported	n = 1000	β=−.32, p=001*
5	Wirth et al. (2022)	Germany	Quantitative	Survey	Developed	Online crowdsourcing market (MTurk)	Privacy risks (IV); Privacy concerns (MV)	Self-disclosure	Not reported	n = 166	PC= β = 0.025, p < 0.001*** PR= β = –0.407***, p < 0.001***
6	Bélanger et al. (2021)	USA	Quantitative	Survey	Adapted	Fitness tracker users	Privacy concern (IV)	Continued usage intentions	Not reported	n = 212	β = -0.27*** p <0.01***
7	Yuchao, et al (2021)	China	Quantitative	Survey	Adapted	Online health community	Heath Information Privacy Concerns (MV)	Self-disclosure Intention	Not reported	n = 264	β = -0.062* p<0.05*
8	Kroll and Stieglitz (2021)	Germany	Mixed-Method	Survey	Adapted	FB users of Germany	Perceived privacy risk (MV)	Self-disclosure	Not reported	n = 382	β = −.320*** p < .001***.
9	Gong et al. (2020)	China	Quantitative	Survey	Adapted	Consumers of a mobile payment application (Alipay Wallet)	Privacy Concerns (MV)	Self-disclosure	Not reported	n = 467	β = –0.22, p < 0.001
10	Zhang et al. (2020)	China	Quantitative	Survey	Adapted	University students	Privacy concern (IV)	Self-disclosure amount	Not reported	n = 596	β=−.47 p <0.001
11	Wu (2019)	United States	Quantitative	Online survey	Adapted	FB users of US	Privacy management (MV); Perceived privacy control (MV)	Self-disclosure	Stratified	n = 249	Privacy manage. →SD (β = 0.352, p<0.001); Perceived privacy control→SD (β=0.050), P= not significant

12	Gruzd et al, (2018)	Canada	Quantitative	Survey	Adapted	Facebook users	Information Privacy Concerns (IV)	Self disclosure amount & depth;	Not reported	n =545	-0.30** (pub); -0.28 ** (priv)
13	Ampong et al (2018)	Ghana	Quantitative	Survey	Adopted	Students of 3 private universities who use SNS	Privacy Awareness (IV); Privacy Concerns (IV); Privacy Risk (IV)	Self-disclosure	Not reported	n=452	PA→ SD (0.259***, p<0.001; PC→SD (-0.190 ***, p<0.001; PR→ -0.361***, p<0.001
14	Osatuyi et al. (2018)	United States	Quantitative	Online survey	Adapted	FB User, undergrad students of a Southern university of USA	Permeability Rule (Privacy Concern) – (IV)	Self-disclosure	Not reported	n = 315	PC→ Shallow Disclosure: (β = 0.04 (ns); PC→ Deep Disclosure: (β = 0.18*, p < 0.05)
15	Hallam & Zanella (2017)	United States	Quantitative	Online survey	Adapted	Public university students	Privacy Concerns (IV)	Self-disclosure	Convenience	n = 222	PC→SD Regression β = -0.100 (not sig.); p = 0.243
16	Liu et al. (2017)	Hong Kong	Quantitative	Online Survey	Not reported	FB users of Hong Kong	Concern about Privacy (IV)	Self -disclosure	Convenience	n = 432	(β = 0.035, p= <0.05).
17	Malik et al. (2016)	Not reported	Quantitative	Online survey	Not reported	Facebook photo-sharing users > 18yrs	Privacy Concerns (IV)	Sharing Activity	Convenience & snowball	n = 378	(t-value= 2.82* p < 0.01)
18	Bevan-Dye and Akpojivi (2016)	South Africa	Quantitative	Online Survey	Adapted	FB users	Access (privacy) Concerns (IV/MV)	Self-disclosure	Convenience	n = 281	β =.65, p=0.000
19	Cheung, et al. (2015)	Hong Kong	Quantitative	Online survey	Adopted	FB users in	Perceived Privacy Risk (MV)	Self-disclosure in SNSs	Purposive	n = 405	–0.025 (t=0.595)
20	Taddicken (2014)	Germany	Quantitative	Online survey	Adapted	Internet users	Privacy Concerns (MV)	Self-disclosure	Not reported	n = 2739	-0.01

IV=Independent Variable; MV=Mediating Variable

The characteristics of extracted data (Table I) identified that privacy concerns have been placed as an independent variable in the larger number of studies (n=13). However, there are a good number of studies (n=10) with a mediating variable role. Interestingly, one study used three aspects of privacy as an independent variable, i.e., privacy awareness, privacy concerns, and privacy risk. Furthermore, one study used two different aspects of privacy one (privacy risks) as an independent variable and the other (privacy concerns) as a mediating variable. There was one study where two aspects of privacy, i.e. privacy management and perceived privacy control, were used in a mediating role.

Privacy aspects, theories, and data analysis software and techniques used

The results presented in Table II confirmed that the 'privacy concerns' (n=17) were the most popular privacy aspect investigated in the selected studies. The other privacy aspects that have been discussed in these selected studies were 'perceived privacy risk' and 'privacy management' (n=2, and n=1, respectively). It has also been reported that most of the selected studies (n=13) tested various theories while focusing the impact of privacy aspects on self-disclosure. The 'Privacy Calculus Theory' has been the most common (n=5), followed by Communication Privacy Management Theory (n=4). Whereas the Social Penetration Theory, Construal Level Theory, Control Agency Theory, Network Effect Theory, Flow Theory, Personality Theory, and Social Exchange Theory have been tested (n=1, each) in the studies under review.

Table II further highlights that the most used software/tool for data analysis has been SmartPLS (n=7). Furthermore, there has been a tendency to use two software in one study. So, the results show that some studies (n=4) used two software, i.e. SPSS and AMOS. Similarly, two selected studies (Bélanger et al., 2021; Rehman et al., 2023) used two software, i.e., SPSS, and SmartPLS, in their studies. The AMOS, AMOS Graphics, and SPSS have also been used by some (n=4 each) researchers as a single software. However, some studies (n=4) didn't report any software used for data analysis. As far as statistical techniques are concerned, the most used techniques have been SEM and PLS-SEM, which have been used by six selected studies. The other used techniques have been Covariance-Based Structural Equation Modeling (CB-SEM), Importance-performance map analysis (IPMA), and Partial Least Squares (PLS) which was used by one study each. However, some studies (n=5) didn't report any technique they used.

Table II

Characteristics of extracted studies

S. No.	Studies	Privacy aspects	Theory/concept applied/tested	Software/tool used for analysis	Statistical technique/ approach/method
1	Rehman et al. (2023)	Privacy concerns	Privacy Calculus Theory	SPSS & SmartPLS 3.0	PLS-SEM
2	Eitiveni et al. (2023)	Privacy concerns	Privacy Calculus Theory	AMOS 24.0	CB-SEM
3	Cao et al. (2023)	Privacy concerns	Communication	Mplus 8.0	SEM

			Privacy Management Theory		
4	Morimoto (2023)	Privacy concerns	Not reported	SPSS	Not reported
5	Wirth et al. (2022)	Privacy concerns	Personality Theory	Not reported	Importance-performance map analysis (IPMA)
6	Belanger et al. (2021)	Privacy concerns	Not reported	SmartPLS 2.0.M3 & SPSS 25	PLS-SEM
7	Yuchao et al. (2021)	Privacy concerns	Privacy Calculus Theory	SPSS 20.0 & AMOS 21.0	Not reported
8	Kroll and Stieglitz (2021)	Perceived privacy risk	Not reported	Not reported	Not reported
9	Gong et al.(2020)	Privacy concerns	Control Agency Theory; Network Effect Theory	SmartPLS 3.2.8	PLS-SEM
10	Zhang, et al. (2020)	Privacy concerns	Communication Privacy Management Theory	R 3.5.1	SEM
11	Wu (2019)	Privacy management	Not reported	SmartPLS	SEM
12	Gruzd, et al. (2018)	Privacy concerns	Privacy Calculus Theory	SmartPLS 3.2.6	PLS-SEM
13	Ampong et al. (2018)	Privacy concerns	Flow Theory	SmartPLS 3	PLS-SEM
14	Osatuyi, et al. (2018)	Privacy concerns	Communication Privacy Management Theory; Social Penetration Theory	SPSS 21 & AMOS 21	SEM
15	Hallam & Zanella (2017)	Privacy concerns	Construal Level Theory	SPSS 23.0 & AMOS 23.0	SEM
16	Liu et al. (2017)	Privacy concerns	Communication Privacy Management Theory	Not reported	Not reported
17	Malik, et al. (2016)	Privacy concerns	Not reported	SmartPLS 2.0	PLS-SEM
18	Bevan-Dye and Akpojivi (2016)	Privacy (Access) concerns	Not reported	SPSS &AMOS 22.0	SEM
19	Cheung, et al. (2015)	Perceived privacy risk	Social Exchange Theory; Privacy Calculus Theory	Not reported	PLS
20	Taddicken (2014)	Privacy concerns	Not reported	AMOS Graphics 17	Not reported

Quality assessment

Since there is a lack of a universally accepted definition of what constitutes high-quality research, evaluating the caliber

of papers is extremely challenging (Kitchenham, 2004). However, there are various evaluation tools available with a range of evaluation standards and checklists, especially in the medical and health sciences field (Rafique & Mahmood, 2018), that are used to check the quality of the research output. One such checklist was developed by (Hong et al., 2018), comprising six questions for three study types, i.e., quantitative, qualitative, and mixed methods studies, separately. This checklist provides three responses, i.e. YES, NO, and Can not tell (CNT). The checklist has seven questions to gauge the quality of the papers. The results presented in Table III highlighted that out of 20 studies, one study sample was not representative of the target population, whereas six studies didn't mention in the methodology whether the sample was representative of the target population or not. For the risk of nonresponse bias, five studies judged nonresponse bias, whereas eight studies didn't mention any level of risk of nonresponse bias. Apart from the above-mentioned quality measures, most of the reviewed studies scored a good quality score as per the appraisal criteria of Hong et al. These results confirmed that the researchers are contributing quality research in the area, which, of course, is a good sign for the researchers themselves as well as the research community.

Table III

Appraisal of studies

Y=Yes; N=No; CNT=Can't tell

Study	A	B	C	D	E	F	G
Rehman et al., 2023	Y	Y	Y	CNT	Y	CNT	Y
Eitiveni et al., 2023	Y	Y	Y	Y	Y	Y	Y
Cao et al., 2023	Y	Y	Y	Y	Y	N	Y
Morimoto, 2023	Y	Y	Y	Y	Y	CNT	Y
Wirth et al., 2022	Y	Y	Y	CNT	Y	Y	Y
Belanger et al., 2021	Y	Y	Y	Y	Y	CNT	Y
Yuchao et al., 2021	Y	Y	Y	N	Y	N	Y
Kroll & Stiegl, 2019	Y	Y	Y	CNT	Y	Y	Y
Gong et al., 2020	Y	Y	Y	Y	Y	CNT	Y
Zhang, et al., 2020	Y	Y	Y	Y	Y	CNT	Y
Wu, 2019	Y	Y	Y	Y	Y	N	Y
Gruzd, et al., 2018	Y	Y	Y	CNT	Y	Y	Y
Ampong et al., 2018	Y	Y	Y	Y	Y	N	Y
Osatuyi et al., 2018	Y	Y	Y	Y	Y	CNT	Y
Hallam & Zanella, 2017	Y	Y	Y	Y	Y	Y	Y
Liu et al., 2017	Y	Y	Y	Y	Y	CNT	Y
Malik, et al., 2016	Y	Y	Y	CNT	Y	N	Y
Bevan-Dye & Akpojivi, 2016	Y	Y	Y	Y	Y	Y	Y
Cheung et al., 2015	Y	Y	Y	Y	Y	CNT	Y
Taddicken, 2014	Y	Y	Y	CNT	Y	Y	Y

Discussion

This study seems to be the first one aimed at systematically reviewing the

literature on the relationship between privacy concerns and self-disclosure using a social networking site, Facebook. This review shows that most of the reviewed literature identified that privacy concerns' impact/influence has been the foremost factor that has been gauged on self-disclosure using social networking sites, mainly Facebook.

Various privacy aspects have been discussed in these selected studies, though the majority (n=17) of the researchers have used the term 'Privacy Concerns'. However, some studies have used other terms that are used interchangeably. Some studies (Ampong et al., 2018; Cheung et al., 2015; Kroll & Stieglitz, 2021; Wirth et al., 2022) have used the term 'Privacy Risk'. However, there are three studies included in this review where the researchers have worked on other aspects of privacy that are close to or parallel to the privacy concerns. For example, Ampong et al. (2018) investigated the impact of privacy awareness on self-disclosure. Similarly, Wu (2019) did a study to see the impact of privacy management and privacy awareness on self-disclosure. Thus, the review found that privacy concerns are the dominant aspect that has been studied. These results also matched with the previous empirical studies (Bevan-Dye & Akpojivi, 2016; Chen & Marcus, 2012; Malik et al., 2016; Martínez et al., 2020; Oghazi et al., 2020; Sharif et al., 2021) that shared similar findings. It can be argued based on the review that the researchers might have chosen this factor to identify because Facebook users have fears about their privacy on social networking sites.

This review witnessed various theories that were tested while gauging the impact of privacy concerns on self-disclosure. Altogether, 13 theories were tested in the studies under this review, whereas seven studies didn't test any theory in the studies under review. The majority of the researchers (10) tested one theory in their studies, whereas three researchers used two theories in their studies. The researchers might find it easy to test one theory at a time in research, which is why the majority went for this option. However, three studies tested two theories each. (Osatuyi et al., 2018) tested Communication Privacy Management and Social Penetration theories, (Gong et al., 2020) tested Control Agency and Network Effect theories, whereas (Cheung et al., 2015) tested Social Exchange and Privacy Calculus theories, respectively. This confirmed that more than one theory can be tested in a study though it might not be easy as compared to testing one theory.

The results of this systematic review confirmed that the majority of the reviewed studies (14) scored between 12 to 13 (out of 13). In this era, the research community is focusing on quality instead of quantity. Organizations, journals, publishers, and countries demand quality research (Safdar et al., 2023). This is the reason, perhaps, we are witnessing quality research in the current times. Of course, it is encouraging for the researchers that quality research is being witnessed in the area.

Most of the research on the topic has emerged from developed countries such as the USA, UK, Germany, etc. These results are also aligned with the previous research findings that confirm the leading role of such nations in producing research. However, the contribution of Ghana, Iraq, and Indonesia is a sign that confirms that the research on the topic represents multifaceted populations around the globe.

Limitations, implications, and future research directions

There have been some limitations in this review. The data were collected from

four databases i.e. Scopus, Web of Science, Library, Information Science and Technology Abstracts (LISTA), and Google Scholar. However, there is a possibility that some relevant studies might have been missed during the collection and screening of the literature. Similarly, the researchers put their every effort into assessing the quality of the reviewed studies in the light of Boynton & Greenhalgh, 2004 guide. However, there is a chance that they might have overlooked any valuable information while assessing the studies' quality.

The findings of this study identified some implications for research and practice. This study has provided a structured review of the current literature on personal self-disclosure on social media with a special focus on privacy concerns. Apart from others, this review reveals that more than half of the reviewed studies (n=12) found a negative impact of various privacy aspects on self-disclosure using social media sites, which invites researchers for more exploration into the reasons for these deviating perceptions. The social media companies can make strategies to address the fears of social media users and to protect their privacy. Also, social media providers can offer various personalized and customized features by empowering users with better control over their privacy and access to personal information, which is likely to mitigate user privacy concerns and improve their trust in social media sites.

This study recommends that similar studies should be conducted in relation to various social networking sites, as this review is limited only to Facebook. Also, there is a need to conduct reviews to see the impact/effect of other factors on self-disclosure, especially in this era of social networking tools. This study also recommends to conduct a study to examine the relationship between privacy and self-disclosure in the context of the COVID pandemic, and they can include Library and Information Science Abstracts (LISA) in their studies. A bibliometric study on a similar topic is also strongly recommended.

Conclusion

This systematic literature review examined the impact of privacy on self-disclosure on Facebook. The review followed the PRISMA guidelines to select the studies to be systematically reviewed. Most of the studies were quantitative in nature, and participants were either students or the general public who used Facebook as a social networking tool to disclose their personal information. The coverage of this subject area in the literature started appearing ten years back, hence, this is a relatively new subject area. The review identified that a larger part of the studies (n=12) found a negative impact of privacy concerns on self-disclosure. Similarly, the findings of the systematic review confirmed that the 'privacy concerns' were the most popular privacy aspect investigated in the selected studies. Most of the selected studies have tested various theories/models in the articles. However, the 'Privacy Calculus Theory' is the most common, followed by the Communication Privacy Management Theory. Moreover, this systematic review confirmed that most of the reviewed studies conducted on the topic scored (in the light of Boynton & Greenhalgh, 2004 guide) a good quality score, and countries from the developed nations were found to be leading regarding publishing on the topic. Social media companies can develop strategies to address the fears of social media users and protect their privacy.

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