

Article

Examining Self-Disclosure on Social Networking Sites: A Flow Theory and Privacy Perspective

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Abstract

Social media and other web 2.0 tools have provided users the platform to interact and also disclose personal information not only with their friends and acquaintances, but also with relative strangers with unprecedented ease. This has enhanced the ability of people to share more about themselves, their families, and their friends through a variety of media including text, photo, and video, thus developing and sustaining social and business relationships. The purpose of the paper is to identify the factors that predict self-disclosure on social networking sites within the Ghanaian context. Data was collected from 452 students in three leading universities in Ghana and analyzed with Partial Least Square-Structural Equation Modeling. Results from the study revealed that all variables in the proposed model with the exception of interaction and perceived control were significant predictors of self-disclosure with privacy risk being the most significant predictor. In all, the model accounted for 54.6 percent of the variance in self disclosure. The implications and limitations of the current study are discussed and directions for future research proposed.

Keywords: self-disclosure; social networking sites; flow; privacy concerns; structural equation modeling; Ghana

1. Introduction

An increasingly connected world has fast-forwarded the rate of information transfer across the globe. Social media and other web 2.0 tools have provided the platform for individuals to communicate simultaneously not only with their friends and acquaintances, but also with relative strangers [1] with

unprecedented ease. This has facilitated the ability of people to share more about themselves, their families, and their friends through a variety of media including text, photo, and video [2], thus developing and sustaining social and business relationships [3,4]. In the literature, this process of “making the self known to others”, described as self-disclosure [5] has been in existence at least since the late 1950s (eg. Jourard & Lasakow [6]), and is a well-established phenomenon in the psychological sphere [7]. With the introduction of social media, in particular, social networking sites, people have been found to reveal more and more of themselves online than they ordinarily would in traditional/off-line settings [5,8]. This has been attributed to the lack of some social cues that are easily evident in face-to-face communications [5], which frees individuals up to express themselves without fear or favour, as well as the absence of self-consciousness that would be existent in personal communications but is not present in online environments [9].

While current research has weighed the costs and benefits of such self-disclosure on social networking sites, citing issues of privacy Krasnova et al. [4], safety Krasnova et al. [10], and how much it should be controlled Christofides et al. [11], as well as considered the qualities of various social networking sites which encourage self-disclosure [3,12], there is still a limited understanding of the antecedents and motivators of self-disclosure. Extant studies on the topic include research by Cheung et al. [8], Krasnova et al. [10], and Walrave et al. [13]; however, these have each studied only a few variables limited to a particular social networking site like Facebook. The current study therefore aims to examine the antecedents of self-disclosure across a number of social networking sites in order to answer the research question: “What factors motivate users to disclose information about themselves on social networking sites?”

The findings from such a study would fill the gaps in literature by providing empirical evidence for constructs that affect consumers’ self-disclosure on social media. It would also be of benefit to marketing practitioners, who can thus discover which factors encourage their consumers to share more about themselves and about brands on their social networking site accounts. This is of importance as research evinces that positive word of mouth on such platforms – also known as eWOM [14], or word of mouse [15]– influences important customer variables like attitude [16], and behavior [17] when it comes to brands. Moreover, policy developers will benefit from these findings in order to properly regulate the limits of social networking site service providers.

Succeeding sections in the current paper will present a brief literature review on self-disclosure within the social networking site sphere, followed by the development of the research model and the hypotheses to be tested. The methodology, results, and discussions of the study will next be shared.

The paper will conclude with recommendations to practitioners and for future research based on the findings of the study.

2. Literature review

The importance of computers and technology as a mediator between two communicating parties is no longer as much of a novelty as it was just two decades ago. The unique features of web 2.0, and its role in making the internet a more accessible and interactive environment [8] even for non-technical users, have facilitated the growth and spread of social media [18]. This online space has provided rich opportunities for brands seeking to connect with their consumers, as the number of useful platforms for such interactions have ballooned over the years since the technology was introduced [19]. One of the most ubiquitous and successful applications for this purpose is social media, which has been defined as “a variety of new sources of online information that are created, initiated, circulated and used by consumers intent on educating each other about products, brands, services, personalities, and issues” [20]. Although this may take a number of forms, the most common among users by far are social networking sites, which have boasted an excess of billions of users across the globe [21]. Most popular among these are sites like Facebook, Instagram, Twitter, and MySpace, whose popularity has been attributed to the fact that not only do they allow users to connect with offline friends, but they also facilitate the creation of new friends and connections [22]. The sites also provide opportunity for users to share their lives with those in their networks [13], using photos, text, or video [23]. This has given rise to the discussion of self-disclosure on social networking sites.

2.1 *Self-Disclosure on SNS*

As social networking sites (SNS) have become more and more integrated into the lives of users, individuals share an incredible amount of information about themselves on the platforms. For example, the public presentation of personal profiles, photos and videos [23], as well as regular status updates on daily events, preferences, experiences, and places in the lives of users [2] has made it relatively easy to discover previously private information about people with a basic Google search. It is little wonder then that some of the major discussions regarding the issue have centered on privacy concerns [4,24,25], often linked to the carelessness and/or avarice of corporations (eg. Chen and Sharma [26]) who gain and share the private information of users once they sign up on the platform. Moreover, phenomena like cyber-bullying, sometimes leading to psychological trauma [27], stolen data [24], and the endangerment of minors [28] have all been reported on social platforms, such that several bodies have called for tighter monitoring of SNSs.

However, consumers themselves seem undeterred by the dark side of social media. Researchers have observed that people are still more open on such platforms where there is a sense of anonymity [29] and freedom of self-expression [5] which cannot be had in face-to-face conversations. According to Meeker (2014), approximately 1.8 billion personal photographs are shared daily across the five leading SNS. The reasons for such overwhelming self-disclosure through both verbal and non-verbal channels [23] has been queried by scholars, who find that users seek to maintain their social bonds and build social capital [5,30], seek feedback [31], and communicate with others [22]. Moreover, Heo [32] find that user trust in the SNS and their level of activity affects their self-disclosure, especially on Facebook, while Aharony [5] reveals that psychographic and demographic elements such as personality traits and age also affect self-disclosure. Additionally, Cheung et al. [8] opine that social influence stemming from a user observing how other users disclose information about themselves, may serve as a catalyst for the sharing of information that may previously have been withheld. This is supported by evidence from Chou et al [33], which displays that when companies share more information about themselves, their customers also are more open towards them. It is evident, therefore, that although users are generally aware of the privacy concerns on such platforms, their needs to participate in the online community and share of themselves with others often outweigh their fears [34].

Furthermore, prior studies on the motivations behind self-disclosure on social networking sites have specified that the interplay of perceived costs and perceived benefits play a significant role. This tallies with social science perspectives of self-disclosure, which hold that individuals weigh costs and benefits before they engage in social exchanges with others. In online contexts, the perceived benefits of self-disclosure include the convenience of maintaining social relationships [35,36]; building and developing social capital through new connections [37]; the presentation and manipulation of how the user appears to others [4]; and entertainment [21]. The perceived costs, as mentioned earlier, largely encompass the loss of privacy [4,25], which may have several adverse effects in the digital as well as physical world [27,29]. These, according to researchers like Cheung et al. [8] and Acquisti & Gross [24] may be mitigated by users' trust in the SNS and in their fellow users not to abuse the information disclosed.

3. Hypothesis development and research model

3.1 Flow

Online flow has been described by some researchers as a cognitive state enjoyed during interaction with websites, where there is a "seamless sequence of responses", making it easy for the user to lose him/herself in the experience of interacting with the platform [3,38]. This helps in improving engagement with the site and its content, especially as it reduces self-consciousness and allows the user to focus his/her attention on the experience s/he is going through. For the purposes of the current study,

therefore, flow is assessed through the user's focused attention on the social networking site, as well as through their interaction with the site. Together, these indicate how flow may lead to increased self-disclosure [39].

3.2 Focused Attention (FAT)

A social networking site user may be so engrossed by the content on the site that they are also motivated to share their experiences with others, and thus, engage in self-disclosure behaviour [40]. Such focused attention may be attributed to the intentional and effective design of the website [41], as well as to the quality of information/content. Whatever the cause, research supports the assertion that when consumers experience the environment where others are disclosing information about themselves, they are also motivated towards self-disclosure [8]. Indeed, users may become so engrossed by the content they are engaging with that they are inspired to respond or share their own experiences on the platform [3], thus engaging in self-disclosure. Moreover, where such focused attention and flow is perceived to be a result of the excellent design of the website, consumers are more inclined to believe in the performance quality of the service provider, and trust in its ability to safeguard their disclosure [42]. Such a positive view of the provider and trust has also been proven to engender self-disclosure behaviour [8]. Further research also establishes that individuals' self-disclosure increases with their level of activity and usage on the SNS platform [32]. This provides support for the supposition that those who engage on the SNS with a focused level of attention and thus are more involved in SNS activities will disclose more information about themselves than other users whose attention is not so focused on the site.

Thus, the current study proposes that:

H1: Focused Attention has a significant positive effect on Self –Disclosure

3.3 Interaction (FINT)

Moreover, the interactivity afforded by social networking sites has been a key part of their design in order to attract continuous usage [30,39]. Interaction here refers to the extent to which users engage with each other's divulged information. Through the avenues provided by SNS not only to read content, but engage with it, users can be an active part of SNS activity [37]. Consumers may provide instantaneous and multifaceted responses to content provided by others in the form of text, emojis, GIFs, or photos, while also enjoying the same immediate kind of feedback from others in their social networks [3]. Such constant interaction provides the opportunity for users to disclose a lot of information about themselves on social networking sites, and thus increase their social capital [31]. Furthermore, the quality and frequency of interaction with others increases the level of trust that the

user has in other members of the social networking site [43], and thus achieves the objectives of creating and maintaining social relationships [44]. This serves as a motivation for disclosing more information about themselves and increases their tendency towards self-disclosure. Finally, it has been intimated that consumers who are using the SNS primarily for entertainment and enjoyment purposes tend to disclose more information about themselves [45]. As consumers gain the greatest enjoyment by participating in ongoing conversations within their social spheres [46,47], it is conceivable that users who are engaged in interaction are more likely to disclose more about themselves on social networking sites.

We therefore hypothesize that:

H2: Interaction has a significant positive effect on Self –Disclosure

3.4 Perceived Control (PCL)

Perceived control on SNS refers to how capable and responsible users feel that they are over the sharing of information which they have disclosed. On most social networking sites, some measure of control over the information available to the public is provided. However, consumers may still feel that they still lack final control over what gets seen by whom. Such a perception is exacerbated by reports of SNSs like Facebook and Twitter complying with government requests for personal information on specific users, without their express permission. Meanwhile, the literature provides a premise that when users perceive greater control over their information, they also perceive reduced privacy risk [48], and thus tend more towards self-disclosure [8,49]. Indeed, it becomes a matter of trust in the online service provider, which spurs consumer usage level and self-disclosure [4,50]. Thus, the current study posits that:

H3: Perceived control has a significant positive effect on Self –Disclosure

3.5 Privacy Awareness (PA)

Privacy awareness refers to users' knowledge and understanding about the options for privacy available to them on a social networking site [8]. While a majority of consumers claim to be aware of how to enforce privacy controls, very few of them actually do so [24]. This has raised questions in research over how aware consumers are about the privacy risks involved in self-disclosure on social networking sites, yielding unsatisfactory results. For instance, only about half of the respondents in some major studies display any concern about their privacy in online environments [51], and a significant proportion of younger social media users remain unaware about privacy risks [28]. Moreover, few users are clear about how the information they disclose on a daily basis is handled or used by the service provider [52], including even those users who claim to have high concern about

their privacy [34]. Some studies therefore suggest that among those users who are aware of privacy issues, trust in the SNS and other users reduces, leading to lower levels of self-disclosure. Contrastingly, though, Hoadley et al. [53] and O'Brien and Torres [54] find that some Facebook users with a high level of awareness about privacy issues rather have increased trust in the service providers, and thus share even more about themselves on the platform. This may be an isolated discrepancy in the results, due to superior privacy controls instituted on Facebook, but could also be attributed to the fact that users with greater awareness of privacy issues maintain or increase their activity levels because they ensure that their connections are secure and that they are relating with people they actually know [55]. It is still then a worthwhile investigation to examine the relationship between privacy awareness and self-disclosure on SNSs. We therefore posit that:

H4: Privacy awareness has a significant positive effect on Self –Disclosure

3.6 Privacy Concerns (PC)

Privacy concerns point out how much a user is concerned about their privacy in online environments [25]. In the literature, the most key concerns have been tied to the fear of cyberbullying, surveillance, stalking, identity thefts, and the like [43,56]. These concerns are often related to the SNS in question and/or the other members of the SNS [4]. Websites and organizations therefore often try to mitigate these concerns by providing facilities like clear privacy policies, which users prefer [57,58], and which help to reduce privacy concerns [59]. Without such interventions, privacy concerns directly affect users' level of trust in the service provider and inhibit their self-disclosing behaviours [24]. Even so, there seems to be some level of disagreement in the literature concerning the effect of privacy concerns on user disclosure behavior. For example, although Dwyer et al. [60] found that privacy concerns reduce users' disclosure on Facebook and MySpace, Tan et al. [61] and Boyd and Hargittai [62] found that such privacy concerns don't necessarily affect SNS usage intentions. We seek to therefore discover the actual effect of privacy concerns on self-disclosure, and thus hypothesize that:

H5: Privacy concerns have a significant negative effect on Self –Disclosure

3.7 Privacy Invasion Experience (PIE)

A truism of human behaviour is that individuals tend to base their future expectations on past experiences. Thus, where consumers have previously experienced an invasion of their privacy, their trust in the service provider plummets [2]. This is due to the fact that there seems to be an unspoken contract between SNS providers and consumers that their data and information will be kept private. Thus, when there is a breach of this implicit contract, users become disillusioned and lose trust in the

provider [63]. Such a negative experience is believed to result in increased privacy concerns and perceived privacy risks [64], making such consumers much more attentive to privacy controls and options for reducing their exposure in online environments. Such consumers are also less willing to provide personal details [64], and may even shut down their accounts on SNS in extreme circumstances [43]. These realities also lead to a decrease in self-disclosure on social networking sites [8], especially compared to other users who have not yet experienced such invasions [64]. However, Li et al. [2] find that where the reputation of the website is positive, users who have previously suffered from privacy invasion experiences may experience reduced perceived risk, which in turn has less of a negative effect on self-disclosure.

We therefore posit that:

H6: Privacy invasion experiences have a significant negative effect on Self –Disclosure

3.8 Privacy Risk (PR)

Both practice and research reveal that there remains a substantive amount of risk for users of social networking sites. Despite the overwhelming social and business benefits that can be gained by individuals, Aharony [5] cautions that although some people may benefit from self-disclosure on sites like Facebook, others may be at increased risk due to information which they share. Probable risks that users may face include, as noted above, stalking, cyberbullying, sexual solicitation, and internet fraud [34,65]. An appreciation of these risks tends to have a negative effect on self-disclosure [66], and therefore, consumers who perceive a security risk will disclose less information about themselves on social networking sites [4]. The major mitigants to this negative relationship have been identified to be trust and perceived control [8,67]. Interestingly, however, researchers have come across a phenomenon termed as the privacy paradox [34], which occurs in social media contexts but is not replicated in other IS literature. The privacy paradox refers to the willingness of consumers to share large amounts of information about themselves online in order to participate in online communities, despite their general knowledge of the security risks associated with such exposure about themselves. Within other IS contexts, such security risks and privacy concerns would result in decreased activity and usage of the system; however, in social networking sites like Facebook, the reverse is observed.

Therefore, we propose that:

H7: Privacy risk has a significant negative effect on Self –Disclosure

3.9 Tie Strength (TS)

The strength of the interpersonal ties formed on the social networking site may also have an effect on the level and quality of self-disclosure on the platform [2,5]. Factors related to social capital have been found to affect self-disclosure behaviour in SNS environments. For example, [2] find that social network size, which is how many friends the user has on the site, strengthens the user's sense of belonging [68], and thus frees them to disclose more and more of their personal information [2,69], as they feel that they are sharing it with their friends. Moreover, researchers like [70] suggest that there are certain types of relationships formed on such sites that may engender increased self-disclosure behaviour. Illustratively, the user may feel compelled to share more about him/herself if there is a friend on the site who has also previously shared a lot with the user in question. Additionally, where a large proportion of 'friends' in users' connections are existing/offline friends, with whom they feel truly connected, they are more likely to disclose more information about their lives [8], as s/he feels that they are simply maintaining existing relationships [4]. Again, applications of attachment theory to social media usage have hinted at the fact that some users who suffer from attachment anxiety and/or avoidance make use of SNS connections [71], while those who do not are more inclined to disclose more about themselves on such platforms [72]. Finally, bonding social capital, which highlights close-knit relationships in which emotional support can be shared [44], has been shown to be increased on social networking sites like Facebook [73]. In the presence of such strong social ties, self-disclosure can be predicted.

The current study therefore hypothesizes that:

H8: Tie strength has a significant positive effect on Self –Disclosure

4. Methodology

4.1 Measurement instrument

The current study adopted measures from previous study with the aim of improving content validity [74]. The items were however re-worded to reflect the context of current study. Attention focus was measured with four items adopted from Zhou [75]. Interaction which reflects the extent that users are interacting and supporting each other to share diverse contents through SNS was derived Lee and Kim [3]. Perceived control was also measured with three items derived from Lee and Wu [76] and Koufaris [77]. Furthermore, privacy awareness was measured with six items derived from Malik et al. [23]. Privacy concern was measured with items derived from Dinev and Hart [25], while privacy invasion experience was measured with two items adopted from Li et al. [2]. Items for privacy risk were also derived from Martins et al. [78]. Finally, tie strength was measured with three items adopted from Ma et al. [79]. The constructs used in this study and their corresponding items are listed in the appendix.

All measurement items were presented in English and measured using a 5-point Likert scale anchored between strongly disagree (1) and strongly agree (5).

4.2 Sample and data collection

In order to test the hypothesized research model, the researchers adopted a survey research methodology to collect data. Data was collected from students in three private universities in Ghana. Students in these universities were sampled based on convenience and handed a paper-based questionnaire. The data was collected over a period of five days. Research assistants were sent to the three universities each with 250 questionnaires. In all, 523 questionnaires were returned, of this number 71 had to be discarded because significant portions of the questionnaires were not filled out. A total of 452 were therefore used for the analysis. From the valid responses, 209 were male and 243 were females. Table 1. shows the detailed sample demographics of our respondents.

Table 1
Profile of Respondents

Profile	Measurements	Frequency	Percent
<i>Gender</i>	Male	209	46.2
	Female	243	53.8
<i>Age range</i>	<18	102	22.6
	18-24	153	33.8
	25-30	119	26.3
	31-40	78	17.3
<i>Level of Study</i>	Undergraduate	297	65.7
	Postgraduate	155	34.3
<i>Privacy settings: my private information is accessible to</i>	Friends only	131	29.0
	Friends and their friends	103	22.8
	Public	160	35.4
	Don't know	58	12.8
<i>Frequency of disclosure</i>	Several times a day	167	37.0
	Once a day	115	25.4
	Once a week	76	16.8
	Bi-weekly	51	11.3
	Once a month	43	9.5

N = 452

5. Results and analysis

Data collected from the survey was analyzed using the Partial Least Square approach to Structural Equation Modelling (PLS-SEM) performed on SmartPLS Version 3. Structural Equation Modelling allowed the researchers to test causal relationships between latent variables in the proposed research model. The current study adopted the PLS approach since a preliminary study of the data collected

showed that the data was non-normal. Also the PLS approach is more suitable since our model is relatively new and untested. Following the two-step approach to evaluating Structural Equation Model recommended by Chin [80], we first tested the reliability and validity of the measurement model and then went on to test the significance of structural path between the latent constructs in the hypothesized model.

5.1 Measurement model assessment

To validate the measurement model, we examined reliability, convergent validity and discriminant validity. The reliability of the constructs was assessed with Cronbach's alpha and composite reliability. As can be seen from Table 2, both Cronbach's alpha and Composite reliability values for all constructs are compellingly higher than the 0.7 threshold recommended by Henseler et al. [81]. Convergent validity of the measurement model was assessed using the Average Variance Extracted. Hair et al. [82] recommend that AVE should be greater than 0.5 for convergent validity to be assured. From Table 2 it can be seen that AVE values for all constructs are greater than the 0.5 threshold, indicative of good convergent validity.

Table 2
Results of reliability and convergent validity testing

Constructs	Items	Loadings	T-statistics	α	CR	AVE
Attention Focus	FAT1	0.823	32.920	0.854	0.901	0.696
	FAT2	0.852	44.494			
	FAT3	0.849	37.710			
	FAT4	0.811	31.753			
Interaction	FINT1	0.798	24.015	0.835	0.886	0.660
	FINT2	0.802	23.698			
	FINT3	0.782	16.034			
	FINT4	0.864	35.422			
Privacy Awareness	PA1	0.763	30.056	0.888	0.915	0.641
	PA2	0.827	44.898			
	PA3	0.848	50.696			
	PA4	0.806	36.577			
	PA5	0.781	24.422			
	PA6	0.775	29.747			
Privacy Concerns	PC1	0.920	109.744	0.953	0.964	0.843
	PC2	0.937	147.906			
	PC3	0.932	150.543			
	PC4	0.898	61.087			
	PC5	0.903	85.809			
Perceived Control	PCL1	0.875	26.003	0.875	0.922	0.797
	PCL2	0.923	49.418			
	PCL3	0.879	29.125			
Privacy Invasion Experience	PIE1	0.962	223.840	0.918	0.960	0.924
	PIE2	0.960	183.550			

	SD1	0.874	73.241			
	SD2	0.875	66.567			
Self-Disclosure	SD3	0.889	78.196	0.891	0.924	0.754
	SD4	0.833	45.000			
	PR1	0.953	150.569			
Privacy Risk	PR2	0.960	219.202	0.955	0.971	0.918
	PR3	0.961	230.820			
	TS1	0.885	57.270			
Tie Strength	TS2	0.851	34.363	0.847	0.907	0.765
	TS3	0.888	51.252			

In assessing discriminant validity the following criteria were used: (a) the square root of the AVE for each construct must be greater than the correlation between that construct and any other construct [83]; (b) the heterotrait-monotrait ratio of correlations (HTMT) values must be less than 0.85 [84]. The results in Table 3 show that the square root of the AVE for each construct is greater than the cross correlation with other constructs. Also, results of the more recent HTMT_{0.85} criterion presented in Table 4 proves discriminant validity. In all, the results showed that the psychometric properties of the measures used in the study were adequate.

Table 3
Test of discriminant validity using Fornell-Larcker Criterion

	FAT	FINT	PCL	PA	PC	PIE	PR	SD	TS
FAT	0.834								
INT	0.614	0.812							
PCL	0.303	0.238	0.893						
PA	0.210	0.195	0.160	0.801					
PC	0.016	0.051	-0.002	-0.206	0.918				
PIE	-0.007	-0.005	0.070	-0.204	0.256	0.961			
PR	-0.002	-0.033	-0.062	-0.134	0.239	0.201	0.958		
SD	0.273	0.251	0.166	0.466	-0.385	-0.393	-0.495	0.868	
TS	0.385	0.364	0.235	0.283	-0.040	0.006	-0.040	0.275	0.875

Note: Square roots of average variance extracted (AVEs) shown on diagonal while off-diagonals are inter-construct correlations

Table 4
Test of discriminant validity using the HTMT ratios

	FAT	FINT	PCL	PA	PC	PIE	PR	SD	TS
FAT									
FINT	0.721								
PCL	0.357	0.276							
PA	0.238	0.223	0.178						
PC	0.036	0.068	0.040	0.224					
PIE	0.061	0.043	0.080	0.225	0.273				
PR	0.040	0.077	0.068	0.147	0.248	0.215			

SD	0.312	0.267	0.182	0.523	0.414	0.435	0.536		
TS	0.451	0.425	0.271	0.322	0.050	0.020	0.048	0.313	

5.2 Structural model assessment

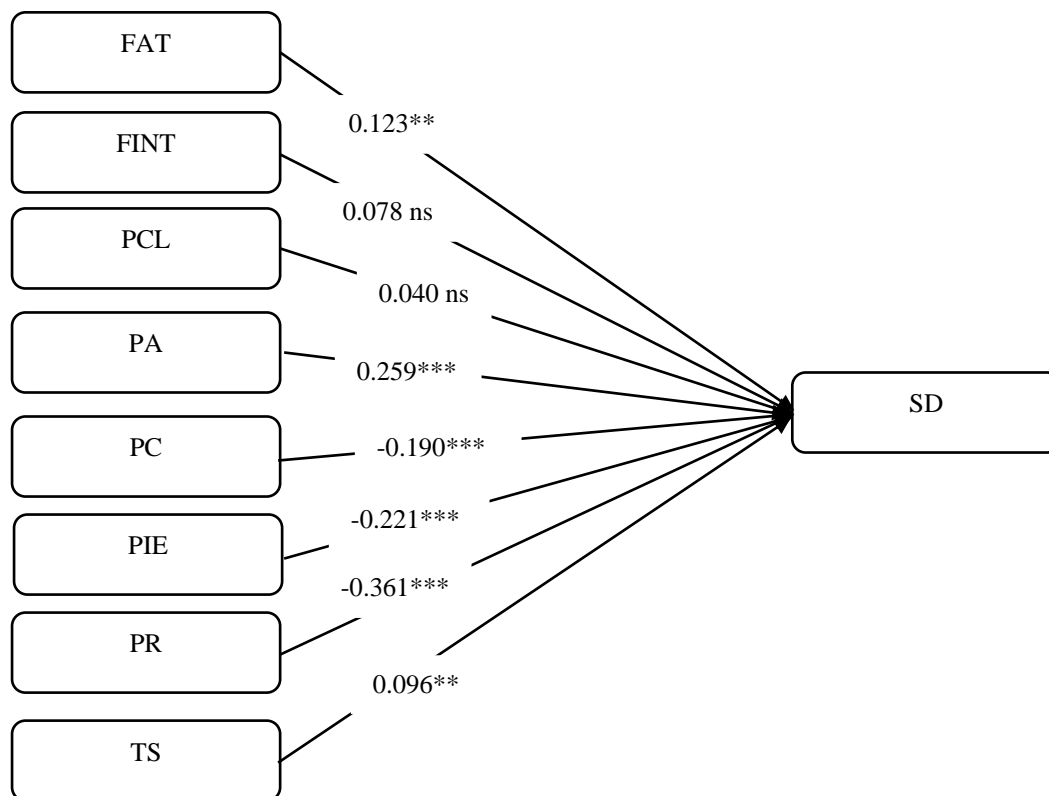
Having obtained a satisfactory measurement model we went on to assess the structural model and determined whether the structural relations in the model being tested are meaningful. A bootstrap resampling procedure (with an iteration of 5000 sub-samples drawn with replacements from the initial sample of 452) was used to determine the significance of the path coefficients in the structural model. Results for the assessment of the structural model are presented in Table 5. and Figure 1.

In support of H1, focused attention was found to be a significant predictor of self-disclosure ($\beta = 0.123$, $p = 0.006$). Interaction and perceived control were however found not to be significant predictors of self-disclosure. Privacy awareness was also found to have a significant positive effect on self-disclosure ($\beta = 0.259$, $p = 0.000$). Privacy concerns was found to have a significant negative effect on self-disclosure ($\beta = -0.190$, $p = 0.000$) thereby providing support for H5. This implies that the more concerned users are about their privacy the less likely they are to self-disclose. Privacy invasion experience was also found to have a significant negative effect on self-disclosure ($\beta = -0.221$, $p = 0.000$). This result suggests that users who have had a privacy invasion experience are less likely to self-disclose. Privacy risk was found to have the most significant effect on self-disclosure ($\beta = -0.361$, $p = 0.000$). Finally, in support of H8, tie strength was also found to have a significant positive effect on self-disclosure ($\beta = -0.096$, $p = 0.004$). In all the model accounts for 54.6% of the variance in self-disclosure. The overall fitness of the model was assessed using the SRMR composite factor model. The composite model SRMR value for the model was 0.044, below the 0.08 threshold recommended by Hu and Bentler [85]. This is an indication that the proposed model presents good model fit.

Table 5
Path coefficients and their significance

Hypotheses	Hypothesized Path	Path Coefficient	T Statistics	P Values	Result
H1	FAT \rightarrow SD	0.123	2.736	0.006	Supported
H2	FINT \rightarrow SD	0.078	1.849	0.064	Not Supported
H3	PCL \rightarrow SD	0.040	1.292	0.197	Supported
H4	PA \rightarrow SD	0.259	6.543	0.000	Supported
H5	PC \rightarrow SD	-0.190	6.100	0.000	Supported
H6	PIE \rightarrow SD	-0.221	6.378	0.000	Supported
H7	PR \rightarrow SD	-0.361	12.162	0.000	Supported
H8	TS \rightarrow SD	0.096	2.900	0.004	Supported

Model Fit	
SRMR	0.044
R-Squared	0.546



*** $p < 0.001$ ** $p < 0.01$ * $p < 0.05$ ns- not significant

Figure 2. Structural model

6. Discussions

The current study focused on identifying and confirming the factors leading to self-disclosure on various social networking sites, filling an important gap in current literature on the specific predictors of such behavior despite privacy concerns in online environments [34]. The results of the study

demonstrate that all hypothesized factors were significant, with the exception of frequent interaction and perceived control.

Importantly, perceived risk was found to be the most significant predictor of self-disclosure on social networking sites. Previous research has hinted at the negative relationship between the constructs [4,65]; however, studies like that of [34] which illustrate the privacy paradox have called into question the certainty of reduced self-disclosure as a result of privacy risks. The current study contributes to the literature as it indicates that within the Ghanaian context, at least, the privacy paradox may not hold, as users still tend not to disclose as much about themselves when they perceive that their privacy may be at risk. Additionally, other factors related to privacy were found to have the predicted effect on self-disclosure behavior. Although some studies found that a significantly small proportion of SNS users were aware of privacy issues [24], and that those who are, subsequently share less about themselves on such sites, our study agrees with research that disputes such a reaction. Like O'Brien and Torres [54] found, users in the current study still share a lot about themselves online even when they are more aware about privacy. Moreover, privacy concerns and privacy invasion experience were also found to have a negative impact on self-disclosure behavior on social networking sites. These findings concur with previous studies [24,60] which demonstrate that user behavior on online social networks is dependent on their perceptions and experience with privacy.

The impact of flow characteristics on self-disclosure was also examined by the current study. Focused attention was found to be a significant predictor of self-disclosure, in support of the assumption that when a user is deeply engrossed in the content and quality of the SNS, s/he is motivated to also share about him/herself [8,32]. Interestingly, however, interaction on the SNS was not found to be a predictor of self-disclosure behavior. This contradicts extant studies which find evidence for the relationship [31,45]. It may be understood that when users are enjoying the disclosure of others and interacting with them, they find sufficient fulfilment [47] and find no need to disclose themselves. It has also been speculated that a large number of social media users are more 'couch potatoes' on social media rather than creators [86]; that may account for their enjoyment of others' disclosure without feeling the need for their own. Again, perceived control was not found to have a significant positive effect on self-disclosure. This comes as some surprise as other studies have established that when users perceive greater control over their privacy, they perceive reduced risk and thus tend towards self-disclosure [49,48]. Future studies may research whether and which other factors may affect the relationship between perceived control and self-disclosure on SNS.

6.1 Implications

The findings of the study provide several useful implications for theory, policy and practice. The paper has contributed to the literature by introducing a number of factors that serve as significant predictors of self-disclosure on social networking sites in spite of privacy concerns. This provides researchers with a basic relationship upon which future studies can build more complex theories to enhance knowledge in this now-ubiquitous research area. Moreover, policy makers will also benefit from these findings. As it is now evident that privacy issues and concerns have a significant negative impact on the usage and self-disclosure habits of users, regulators must do well to enhance policies which ensure the safety and privacy of the information shared on social networking sites. They must also work closely with SNS creators to prevent exploiters from taking advantage of users' ignorance on privacy issues, and multiply efforts to educate every SNS user to take necessary precautions as they share about themselves. Finally, in practice, the findings of the study prove invaluable to marketers seeking to encourage eWOM behavior among their consumers on social networking sites. As focused attention increases self-disclosure, brands should ensure that their pages are well-crafted to engross users and encourage them to share about their experiences of the brand. The creators of social networking sites can also focus on highlighting the security of their sites so as to set users minds at ease and thus encourage their continued usage and patronage.

6.2 Limitations and directions for future research

The current study found some exciting result that endorses previous studies, however a few limitations must be taken in to consideration when interpreting and generalizing results. First, data was collected from students in three universities in Ghana. Even though this sample represents a fairly typical band of SNS users it is still not representative of all SNS users. Secondly, our study employed a cross-sectional design, however, since user behaviour changes over time it would be interesting to consider a longitudinal design in future studies. Third, the context of our study constrains us from making generalization to other cultural contexts as well as other stronger economic environments such as the advanced economies. Other researchers could consider obtaining data from stronger economic environments and emerging markets and investigating its moderating effect on self-disclosure on SNS. Lastly, other researcher could explore the moderating role of gender and age.

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