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I, Prudence M Attablayo, hereby submit this original work as part of the requirements for the degree of Master of Science in Information Technology.

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Examining the Impact of Privacy Awareness of user self-disclosure on social media

Student's name: **Prudence M Attablayo**

This work and its defense approved by:

Committee chair: Kijung Lee, Ph.D.

Committee member: M. Murat Ozer, Ph.D.



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EXAMINING THE IMPACT OF PRIVACY AWARENESS OF USER SELF-DISCLOSURE ON SOCIAL MEDIA

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By

Prudence Mamle Attablayo
BSc Computer Science. Kwame Nkrumah University of Science and Technology

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Committee Chair: Dr. Ki Jung Lee, Ph.D.

Abstract

This research aimed to investigate the relationship between users' privacy awareness and their self-disclosing behavior on social media. The study explored the knowledge of the benefits and risks associated with sharing personal information on social media and how that affects users' self-disclosure behavior. The researchers used a section of the University of Cincinnati student population to gather data through an online survey using a 5-point Likert scale.

The study's independent variables were benefit awareness, risk awareness, and social media platforms, while the dependent variable was self-disclosure. The researchers found that users who were more aware of the benefits of sharing personal information on social media were more likely to disclose more information. However, users who were more aware of the risks of sharing personal information on social media were less likely to disclose information. The research also found that users' perceptions of risk varied across social media platforms, and their sharing habits varied based on their levels of risk, benefits, and social media platforms.

The study found that users' main motivation for engaging and disclosing on social media was their need to stay in touch with friends and their need for community. On the other hand, the main risk associated with sharing personal information was the fear of being impersonated and misunderstood by others. These findings were consistent with the data collected from open-ended questions.

In conclusion, this research highlighted the importance of users' privacy awareness in their self-disclosing behavior on social media. The study found that users who were more aware of the benefits of sharing personal information were more likely to disclose more information, while those who were more aware of the risks were less likely to disclose information. The study also found that users' perceptions of risk varied across social media platforms, and their sharing habits varied based on their levels of risk, benefits, and social media platforms. The main motivation for engaging and disclosing on social media was the need for social connection, while the main risk associated with sharing personal information was the fear of being impersonated and misunderstood by others.

Keywords: Privacy Awareness, Benefit Awareness, Risk Awareness, Self-Disclosure, Privacy Calculus

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Table of Contents

Abstract.....	ii
Acknowledgments.....	v
List of Figures and Tables.....	viii
Introduction.....	1
Literature Review.....	3
Theoretical Background of Privacy Calculus.....	3
Privacy Awareness.....	5
Benefit Awareness.....	6
Risk Awareness.....	8
Self-Disclosure.....	10
Research Questions.....	13
Hypotheses.....	13
Methodology.....	14
Participants.....	14
Data Collection.....	14
Questionnaire Development.....	15
Procedure.....	17
Data Analysis and Results.....	19
Factor analysis of RQ1.....	19
Benefit Awareness.....	20
Risk awareness.....	20
ANOVA analysis.....	23
Benefit awareness.....	23
Risk Awareness.....	24
Social Media Platform.....	24
Social media Platform * Risk awareness * Benefit awareness.....	25
Benefit Awareness * Risk Awareness.....	25
Benefit Awareness * Social Media Platform.....	25
Risk Awareness * Social Media Platform.....	25
Discussion and Conclusion.....	27

References	30
Appendix.....	35
List of survey questions	35

List of Figures and Tables

Table 1: Survey Demographics Table	15
Table 2: Pilot Study	17
Table 3: Benefit Awareness (Factor Analysis)	21
Figure 1: Measure of Sampling Adequacy	21
Table 4: Risk Awareness (Factor Analysis)	22
Figure 2: Scree Plot for benefit awareness	22
Figure 3: Scree Plot for Risk awareness	23
Figure 4: ANOVA Analysis	26

Introduction

As the distinctions between our online and physical lives continue to become hazier, privacy concerns on social media are more crucial than ever. With a single click, you can instantly broadcast to the entire world your opinions, activities, and even private information. It's vital to think about the effects of your online conduct as you navigate the digital world and to take precautions to keep yourself and your personal information safe from public scrutiny.

With the help of social networking services, there has been a significant increase in user engagement in recent years. TikTok alone is one of the most used platforms with over 750 million users. People in today's world are becoming more open to sharing personal information and with the help of our current digital culture, this has been made possible using the convenience of internet services Cavusoglu, Phan, Cavusoglu, and Airoidi, (2016). However, as connectivity increases with smart mobile devices and social media use, so does the risk of data breaches Crossler and Bélanger, (2019), Gerhart and Koohikamali, 2019, Gu et al., (2017). In all this, there is a thin line between user-sharing behaviors and privacy awareness. There have been many attempts to define privacy in various research papers related to privacy in e-commerce, social networking websites, and other fields - In its broadest sense, privacy is often associated with the "right to be alone" Warren & Brandeis, (1890). Klopfer & Rubenstein, (1977) views privacy as a regulatory process designed to selectively control access to external stimuli oneself or the flow of information to others. It can also be viewed as a claim that can be redeemed for more value. For so long the concept of privacy has been viewed from the lens of privacy calculus with the assumption that: users make rational decisions based on their

preconceived perception of the benefits and risks they will gain from sharing their private information. However, users have not been questioned on their actual knowledge of these benefits and risks. In this research, privacy awareness is being examined based on users' awareness of benefits and risks and how it translates into their self-disclosure intentions. Over the past two years, we have seen a rise in social media user engagement. The lockdown led to many people sharing a portion of their private lives and time on social media and out of these practices there have been some good things and bad things that have emerged. In terms of good things, we have seen roles like social media engagement manager, influencer, and content strategist amongst others become full-time jobs for others. One other good thing is the new way of making friends on social media. Through the lockdown, people found others on social media with similar likes and out of several conversations have grown friendships. In terms of the bad things, we have seen an increase in depression, cyberbullying, and crime influenced by inadequate social media privacy sharing awareness. The main objective of this research is to examine how younger users feel about the benefits and risks of disclosing themselves on social media and how the younger users' self-disclosure is influenced by the risk-benefit assessment of self-disclosure based on various social media platforms. In the subsequent sections of this paper, we discuss the theoretical background to privacy calculus and privacy awareness in the literature review. From there we proceed to discuss the three main categories of benefit and risk awareness we identified. The methodology section comes next where we discuss our data collection, population, and data analysis and then we conclude with our discussion and conclusion.

Literature Review

Theoretical Background of Privacy Calculus

Privacy calculus is a way of understanding the privacy and security trade-offs of a given technology, system, or organization. The term Privacy Calculus theory, originally known as the "calculus of behavior," is a theory that makes the assumption that people will divulge personal information when the perceived benefits outweigh the possible costs Laufer & Wolfe, (1977). Knijnenburg et al., (2017) say that the decision to share data is characterized by privacy calculus as a balance between the benefits and risks of disclosing personal information. Nevertheless, numerous researchers have discovered that many times these decisions are not calculated at all and that users devise strategies to work around disclosing their information Acquisti (2006). Critics claim that the privacy calculus is overly simplistic and does not account for the realities of individuals' decision-making processes when planning on whether to disclose personal information Dinev, T., & Hart, P. (2006). Over the years this concept has been studied through different approaches like game-simulated scenarios to see how users act when they have to make a privacy-related decision. Other researchers have also used the field of machine learning to understand user privacy behaviors. Privacy calculus involves weighing the costs and benefits of sharing the information, as well as the level of trust the individual has in the recipient of the information. Other critics also claim that the privacy calculus makes several unverified presumptions, such as the notion that individuals have constant and stable privacy preferences, or that people can properly estimate the risks and benefits of their privacy decisions.

The primary criticism about the privacy calculus is that most regression models designed and tested in the existing privacy calculus are based on the assumption that users can make rational decisions about self-disclosure when in fact, they have no experiential information about the impact of self-disclosure. So, in the context of this thesis, we want to include the awareness (knowledge) of the users about the benefits and risks and how self-disclosure is managed based on the knowledge.

There are several factors that can influence an individual's privacy calculus, including the perceived value of the information being shared, the potential risks and consequences of disclosure, and the individual's level of control over the information. There are also cultural and societal factors that can influence privacy calculus, such as the legal and social norms surrounding privacy in a particular location.

The depth and diversity of life that comes with progressing society has forced some withdrawal from the world, which has caused man to become more sensitive to publicity as a result of culture's refining influence and has made solitude and seclusion more important to the individual Warren & Brandeis, (1890). Knijnenburg et al.,(2017) say that the decision to share data is characterized by privacy calculus as a balance between the benefits and risks of disclosing personal information. People have various reasons for sharing information online some of which are for their personal enjoyment and satisfaction Jozani, M., Ayaburi, E., Ko, M., & Choo, K. R. (2020). This paper has categorized and will explore three major benefits and risks of privacy awareness identified.

The privacy calculus is used prescriptively in user-tailored privacy, and machine learning algorithms that use the risk/benefit trade-off as an objective function. Existing research

has shown that most users make heuristic-based privacy decisions as compared to making rational decisions. Previously it can be argued that the privacy calculus approach has viewed privacy from users' retrospective and rational perspectives. In this research, we are using the concept of user privacy benefit and risk awareness to more precisely measure their self-disclosure intentions based on specific social media platforms.

Limited knowledge of how the layout and user experience of online platforms affect people's privacy calculations Cranor & Doolin, (2011). Lack of study on children's and teens' privacy calculus Lenhart et al., (2010). A lack of comprehension of the function that emotions play in the privacy calculus (Acquisti & Grossklags, 2005). With our current knowledge of the privacy calculus, we take a different perspective in this research by examining the impact of privacy awareness of users' self-disclosure on social media.

Privacy Awareness

The more aware individuals are of the possible hazards and dangers involved with revealing personal information online, the less likely they are to engage in such behavior Joinson, A. N. (2008). Considering one's own privacy rights and how to safeguard them, as well as the privacy policies and practices of organizations like social media firms, are all part of privacy awareness. On social media, this entails being knowledgeable about how the platform gathers, utilizes, and disseminates personal data as well as taking precautions to safeguard one's own personal data, such as modifying privacy settings and exercising caution when sharing information publicly. It also entails being informed of the dangers and repercussions of disclosing personal information online. For this research, we identified the three most used social media applications by our target audience. These applications are Snapchat, Tiktok, and Instagram. We saw the disparity

in the level of self-disclosure based on the platform's features. It has previously been identified that some platforms enable more user sharing than others. For platforms like Twitter which is mostly text-oriented we and in this section, we delve into the three most common benefits and risks we identified during this research.

Benefit Awareness

There are various reasons that contribute to why people share information online, some of which are for their personal enjoyment and satisfaction Jozani, M., Ayaburi, E., Ko, M., & Choo, K. R. (2020), social benefits which includes but is not limited to social capital, relationship management, personal branding and for societal benefits - where societal benefits are with regards to adding value to the society using social media as a platform. We investigated previous research and came to the conclusion that these are the primary benefits of social media. These benefits are Personal Benefits, Social Benefits, and Societal Benefits.

a. Personal Benefits.

Williamson, P., Stohlman, T., Polinsky, H. (2017) "A Survey of Self-disclosure Motivations on social media," looks at the reasons people disclose themselves on social media. This study presents the results of a survey of social media users who were questioned about the reasons they gave for disclosing personal information online. According to research, sustaining relationships, getting feedback and validation from others, and projecting a specific image to others are the three most frequent reasons for self-disclosure on social media. The urge to express oneself, they want to connect with friends and family, and the desire to find others who have similar interests were among the other factors mentioned

in the survey. Understanding the motivations behind self-disclosure on social media is crucial to comprehend the function that social media plays in people's lives. Self-disclosure on social media is driven by a complex interplay of societal and personal elements. Consequently, it is critical.

b. Societal Benefits.

Taneja, A., Vitrano, J., & Gengo, N. J. (2014) talk about how self-disclosure on social networking sites has changed from being a personal estimate of privacy to taking social ties and relationships into account. It advises people to consider the advantages and disadvantages of disclosing personal information online in light of their social networks and the social norms of their online communities. During the pandemic we saw the power of social media with its ability to start a revolution of change through campaigns like Black Lives Matter and governments used social media platforms to educate their citizens on the covid 19 pandemic. Through such initiatives championed by individuals, we have seen the benefits of what social media can do for society.

c. Social Benefits

Using social media can have a lot of positive social effects. Due to the ability to interact with others who have similar interests and experiences, social media may increase social ties and lessen loneliness, according to some research. Social media may be a helpful tool for sustaining and creating online groups as well as for expressing oneself. Johnson, T. J., & Kaye, B. K. (2014) states that social media can have a variety of benefits on social relationships and well-being. For instance, it has been discovered that using social media is linked to higher levels of social capital (i.e., the resources that people may access through their interactions with others) and lower levels of loneliness. Evans, N. J.,

Schwartz, H. A., & Bos, J. E. (2017) In this study, a sample of college students' Facebook usage was compared to their overall well-being. Facebook use, according to the authors, was connected to better mental health when it meant revealing more personal information and communicating with people who were close to you.

Risk Awareness

The amount of research on the privacy risks connected to social media use is expanding. Numerous social media users are ignorant of the privacy dangers they encounter when using these platforms, according to several important results from recent studies. Only 25% of social media users completely comprehend the privacy regulations of the platforms they use, according to a survey published in the Journal of the Association for Information Science and Technology Sheldon, (2020). Users of social media frequently share personal data in exchange for perceived advantages like access to exclusive material or tailored recommendations.

People are more inclined to divulge personal information on social media when they anticipate good results, according to a study in the journal Computers in Human Behavior Acquisti & Grossklags (2005).

Social media firms frequently capture and use people's personal information for profit by using data mining and targeted advertising strategies. A study indicated that social media businesses frequently use user data for targeted advertising, potentially violating users' privacy. The study was published in the journal Information, Communication & Society Mossberger, Tolbert, & McNeal (2013). The usage of personal information by social media corporations is neither transparent nor under our control. According to a study in the journal New Media & Society, users of social media frequently have very little power over

and little knowledge of how their personal data is utilized Lenhart (2015). We investigated previous research and concluded that these are the primary risks users are aware of.

a. Personal Risks

One of the main risks that kept showing up in our data collection and from existing research was people. While people can be a great benefit, they can also be a great risk. Users mentioned that not being aware of and enforcing their privacy settings could increase the likelihood of their posts being scrutinized by their followers. According to research, social media users frequently divulge personal information such as their home address, phone number, and location data, putting them in danger of identity theft and other privacy infractions Acquisti & Gross, (2006). If this is not controlled, Studies have found a link between using social media and bad mental health problems like depression, anxiety, and low self-esteem Baumeister & Leary, (1995); Kross et al., (2013).

b. Security Risks

There is no disputing that social media has altered the way we communicate with one another. Social media platforms have become a platform for exchanging information, ideas, and personal experiences, with billions of individuals globally. When it comes to privacy, though, social media use can be hazardous. In recent times we have seen how social media has led to the mass destruction of people's lives etc. We have seen young people destroy their reputations by posting the wrong content and people get stalked by the mere fact that they posted too much and gave too much and brought unnecessary attention to themselves. Krasnova, Wenninger, Widjaja, and Buxmann (2010) found that while users of social media platforms were aware of privacy hazards, they frequently did

not appreciate the entire scope of these risks. According to the findings of Brandtzaeg, P. B., & Heim, J. (2012), social media users have limited privacy awareness, and the majority of users trust social networking sites to secure their personal information.

c. Social Risks

In terms of social risk. The focus here will be on the user's inability to regulate how their content is used once it has been shared online. We have seen cases of impersonation and defamation from the content being reshared on social media by third parties. A person's post can be shared without their knowledge whether they have a private or public account. Screenshots can be taken and the posts in themselves can be misunderstood by viewers. During our data collection, one of the social risks we accessed was users' awareness of knowing their posts can be misinterpreted or misunderstood by others and this was a point most strongly agreed with.

Self-Disclosure

Sharing habits in this literature review refer to the practice of users sharing their information on social media. In Levy, Gudes, & Gal-Oz (2018), they argue that although social media platforms provide room for their users to control their privacy, most users are not aware that the private information they share might leak to the users with whom they do not wish to share it. In recent times sharing information on social media has been likened to being creative. It has even led to jobs like content creation, social media influencing, and social media marketing. All these roles require that content is shared on a constant basis and has even been identified as a way of increasing followers and likes on a social media account(Twitter and Instagram) Chua & Chang, (2016) This has not only transitioned to businesses but has also caused individuals to feel obliged to share

their content and live their lives on social media as a way of increasing their followers and likes. From Chua & Chang (2016), it was identified that young people share selfies and post their daily activities online because they do not want to feel left out from their peers. Their sole aim is peer recognition.

Another important point is the fact that users did not mind posting false information if it made them feel recognized. Also, some users used fake accounts or provided false information in the creation of their accounts and hence do not see anything wrong with sharing the information on the platform. It was discovered by Krasnova, Spiekermann, Koroleva, & Hildebrand (2010) that users are motivated to share information due to the ease of social media platforms. In this research, our focus is to understand the factors that influence user privacy-sharing behaviors on social media.

When a person reveals personal information about themselves to others, it is called self-disclosure. Both Derlega and Grzelak (1979). Self-disclosure is a typical communicative behavior for expressing oneself, making connections, and sharing personal information. As closeness, accuracy, and self-awareness increase, so does the amount of information shared. Wheelless and Grotz (1995) and Altman and Taylor (1973) (1976). As the whole point of social media is to get people to willingly share their own content with one another Boyd and Ellison, (2007), people use it to talk about themselves, their thoughts, and their feelings (Krasnova et al., 2011). (2012). Users' willingness to share personal information on social media platforms explains their participation in such pursuits.

Users of social media may provide personal information for a variety of reasons, including but not limited to: connection building and maintenance, public profile enhancement, creative outlet, information clarification, and social amusement. Ledbetter et al., 2014;

Bazarova and Choi, 2014; (2010). These drives can be seen as the positive associations (e.g., pleasure) that users develop with social media as a result of their disclosures. Several types of trust beliefs and satisfaction have been found in empirical investigations to boost the readiness to share. According to a study by Krasnova et al. (2012), Financial remuneration (Dinev et al., 2013) General advantages of social media use (Xu et al., 2009) Along with Metzger, Dienlin (2016).

The term "privacy paradox" refers to the discrepancy between people's privacy concerns and their behavioral patterns, like sharing private information online. This discrepancy has been seen in a variety of settings, such as social media, internet shopping, and managing health data. The social compensation hypothesis, which states that individuals may publicly reveal more private information because of the perceived advantages of community connection and support, has been applied to explain the privacy paradox. This theory is backed up by research that demonstrates that individuals who are lonely or have low self-esteem are more inclined to engage in self-disclosure on social media Dienlin & Trepte, (2016). This research considered three common benefits and risks users identified and is measuring users' self-disclosure based on the knowledge of their awareness in reference to their tendency to self-disclose.

Research Questions

By the end of this research, these are the two main questions we hope to answer:

1. How do younger users feel about the benefits and risks of disclosing themselves on social media?
2. How is the younger users' self-disclosure influenced by their awareness of privacy risks and benefits?

Hypotheses

We will be testing four main hypotheses with the data we collect.

H1: There is a main effect of benefit awareness on social media user self-disclosure.

H2: There is a main effect of risk awareness on social media user self-disclosure.

H3: There is a main effect of different social media platforms on social media users' self-disclosure.

H4: There are interaction effects on risk awareness, benefit awareness, and social media platforms on users' self-disclosure.

Methodology

Participants

Two Hundred and sixty students from the University of Cincinnati ranging from ages 18 to 30 voluntarily participated in this survey. There were a group of students who were awarded extra credit for participating in this survey while others were encouraged to participate. This decision was solely based on the discretion of their professors to encourage participation. Informed consent was obtained from all participants.

Data Collection

Before collecting data, we went through the IRB approval process where we explained the nature of our research, how we were going to collect data, and how we were going to store the data safely. We also outlined that there were no risks involved in the data collection process and how we intend to use the data for the purposes of this research only. After what took us three weeks to process, we received approval, and a survey was created using Microsoft forms to collect data from participants with established consent. A five-point Likert scale was used to measure participants' level of agreement with the survey questions with responses ranging from strongly disagree (1) to strongly agree(5). To reach our targeted number of 250 participants we went through the systematic approach of reaching out to professors and rallying for the survey to be shared with their students. At the end of the survey, we had a total of 260 responses with the demographics summarized in the table below (Table 1). All surveys were conducted on a computer with the results extracted and analyzed with SPSS.

Number of Participants	Platform Preference	Engagement frequency	Academic levels	Age demographics
260	Instagram- 124 (47%) Snapchat- 59 (23%) TikTok - 55 (21%) Others - 23 (9%)	Several times a day - 200 Once a day - 36 Once a week - 24	Freshmen - 52 Juniors - 55 Sophomores - 61 Seniors - 48 Graduate - 26 Graduated in less than a year - 17	18- 20 years - 115 (44%) 21 - 22 years - 64 (25%) 23 - 25 years - 42 (15%) 26 - 30 years - 38 (15%)

Table 1: Survey Demographics Table

Questionnaire Development

The survey used for data collection consisted of univariate instruments. The main scale for the measurement of people's risk and benefit awareness level and their self-disclosure tendency was the 5-point Likert scale. There were seven statements to express privacy benefits, six statements for privacy risks, and ten statements for self-disclosure. To check the reliability of the statements used for the measurement in this study we embarked on a pilot study which had a couple more statements. During the analysis of our pilot study, we removed items that contributed negatively to Cronbach's alpha.

Item – Total Statistics Scale

Scale Mean if	Variance if	Corrected	Cronbach's
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	Item Deleted	Item Deleted	Item-Total Correlation	Alpha if Item Deleted
Screenshots	46.5455	102.641	0.615	0.841
Chat	46.1364	100.409	0.599	0.841
Screenshot				
Vacation	46.0000	105.048	0.524	0.846
Photos				
Location	46.5000	110.738	0.270	0.857
Sharing email	46.4091	100.634	0.694	0.837
Tag friends	44.6818	114.037	0.234	0.856
Sharing Event	45.2273	109.994	0.261	0.859
School	44.4545	112.545	0.277	0.855
Attending				
Graduating	44.8636	101.076	0.684	0.838
pictures				
Health issues	46.3636	105.385	0.519	0.846
Feeling Sick	46.4545	105.212	0.547	0.845
Intern	45.5000	107.595	0.447	0.849
Intern2	45.8182	103.108	0.622	0.841
party	46.0909	100.944	0.637	0.840
Benet	45.3636	110.719	0.297	0.855
Personal	46.6364	109.957	0.331	0.854
Statement	45.0909	114.658	0.149	0.860

Open	46.3636	106,338	0.476	0.848
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Table 2: Pilot Study

The table above (Table 2) shows the total item correlation between the statements and Cronbach's alpha values if deleted. With this information, we reevaluated our final survey and Hence for our final study, we used only the statements with a high total correlation of 0.5 and above.

Procedure

Participants were given a survey link or QR code via their canvas applications. Some professors gave their students extra credit for participating in the survey. This decision was solely based on the professor's discretion. For those not given extra credit, the professors encouraged them to participate according to their capacity. The survey was open for a maximum of sixteen days in total. The description section of the survey had a summary of the purpose of the research and participants' expectations. The link to the Informational consent form was embedded in the description section.

The main form had four distinct sections. The first section of the form was to reiterate the eligibility (age, willingness to voluntarily participate, and active participants of the social media platforms in the scope of the research) of desired participants. The second section was structured to understand participants' level of engagement on their preferred social media platform. Participants were asked to select their most used platforms and how often they interact and engage on a daily basis. The third section

was to analyze their awareness level of the benefits and risks of sharing information on social media and their self-disclosure intention.

They were presented with statements on personal, social, and societal risks and benefits and possible reasons for self-disclosure and had to make a decision based on a five-point Likert scale.

After each subsection, they were asked open-ended questions to give their feedback on the benefits and risks and why they disclose information on social media.

The fourth and final section was on demographics. Here they were asked to select their age range and their level of education.

Data Analysis and Results

Of the 260 students we had, 115 participants which form 44% of our population is between the ages of 18 and 20 years old, 64 participants(25%) were between the ages of 21 and 22 years, 42 participants(16%) fall between the ages of 23 and 25 and 38 participants (15%) were 26 and above years old.

Regarding their academic level, we had a good span of participants across all levels from sophomore to graduate school. From the three main applications in the scope of this research, we had 123 participants (47%) choose Instagram as their most used application followed by Snapchat which had a total of 59 people(23%) report to be their most used application. 55 participants reported TikTok to be their most used application which accounts for 21% of the total participants and 23 (9%) participants reported using other social accounts like Twitter, Facebook, WhatsApp, and discord.

The two research questions and three hypotheses were tested with factor analysis and a three-way analysis of variance (ANOVA). Independent variables were privacy benefit awareness, privacy risk awareness, and social media platforms while self-disclosure was our dependent variable.

To answer our first research question: How do younger users feel the benefits and risks of disclosing themselves on social media? We addressed hypotheses one and two.

Factor analysis of RQ1

We measured participants' level of privacy awareness of the benefits and risks of using social media by providing statements and giving them options to respond to with a 5-point Likert scale. These statements covered the three types of risks and benefits which we believe people perceive from their use of social media and this has been discussed in the

literature review. What we saw in our reports was that there are two main components that influence younger users' benefits and risks awareness. We interpret this as two main types of benefit and risk awareness. The KMO value for sampling adequacy for benefit awareness is .830 which means that the variables share a lot of information with each other and that there is a strong partial correlation. As a result, factor analysis is feasible.

Benefit Awareness

From our survey, we saw that there are two main components that users perceive as benefits awareness. We saw that staying in touch with friends, sharing restaurants and spots as recommendations to friends, and sharing accomplishments were highly correlated (>0.5) and form one major component. They fall between personal benefits and social benefits, and we can conclude that socio-personal benefits are one of the main types of benefit awareness. The lower three were also correlated, assuming they have something to do in common and we will name them societal benefits. The first four statements will be summed up as socio-personal benefits and represent component one in our pattern matrix table. Component two represents societal benefits which also show correlation but the figure is not significant enough (<0.5) hence we conclude they are the second type of benefit awareness people gain from social media. From our scree plot, we see that the two factors have an eigenvalue greater than 1 which also confirms that there are indeed two main components that influence benefit awareness.

Risk awareness

Likewise, for risk awareness, we saw that there were two main components that represent the types of risk awareness users perceive. We saw a high correlation (>0.6) between the responses for those who were more aware of the likelihood of getting impersonated,

having their content shared without their knowledge, and having their post misunderstood by others. The KMO value for our risk awareness statements was .730, indicating that our sampling is adequate. We noticed some of the risks also coincided and could be both personal and security at the same time so from our pattern matrix component one represents personal security risk and component two is social risks. Figures can be found in Table 3 and Figure 1. For the highly correlated figures we conclude that security and personal risks are the two main types of risk users are aware of. Our scree plot confirms that these two components have an eigenvalue (>1) which further solidifies our conclusion that there are two main types of risk awareness.

Pattern Matrix ^a		
	Component	
	1	2
Stay in touch with friends	0.831	0.178
Share accomplishments	0.698	-0.126
Share restaurants and spots	0.725	-0.090
Share my location	0.669	-0.135
Engaging with other people	-0.021	-0.845
Share my experience	0.041	-0.848
Share my vacation experience	0.041	-0.818
Extraction Method: Principal Component Analysis.		
Rotation Method: Oblimin with Kaiser Normalization.		
a. Rotation converged in 6 iterations.		

Table 3: Benefit Awareness (Factor Analysis)

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.83
Bartlett's Test of Sphericity	Approx. Chi-Square	540.788
	df	21
	Sig.	<.001

Figure 1: Measure of Sampling Adequacy

Pattern Matrix ^a		
	Component	
	1	2
Unnecessary attention	0.230	-0.653
Unsure of data usage	0.151	0.843
Impersonate or stalk	0.780	-0.105
Misunderstand	0.810	0.034
Without Consent	0.851	0.195
Pictures	0.554	-0.127
Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization.		
a. Rotation converged in 4 iterations.		

Table 4: Risk Awareness (Factor Analysis)

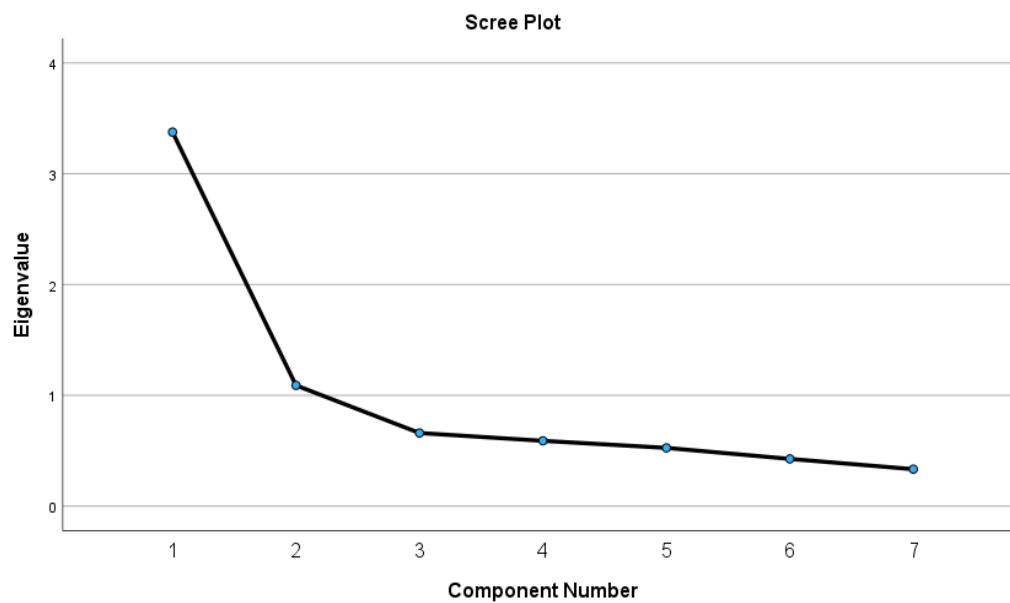


Figure 2: Scree Plot for benefit awareness

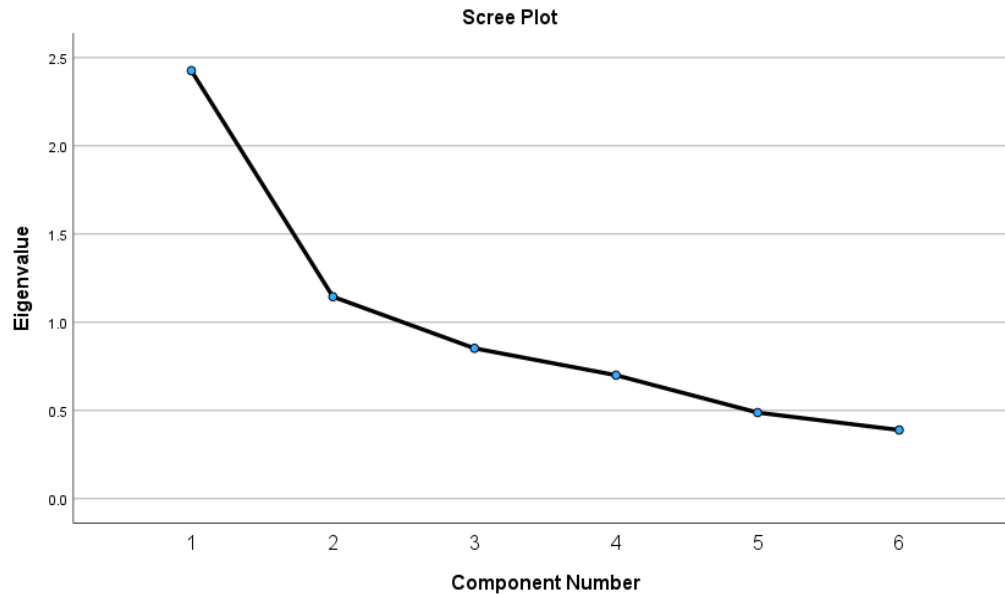


Figure 3: Scree Plot for Risk awareness

ANOVA analysis

We used Anova analysis to investigate our second research question.

R2: How is the younger users' self-disclosure influenced by the risk-benefit assessment of self-disclosure?

Benefit awareness

From the Test of Between subject effects table below we see that there is a main effect of benefit awareness on the self-disclosure of users on social media. Therefore, we conclude that the more users are aware of the benefits of social media they will disclose information on social media ($F = 36.291$; $df = 1$; $p < .001$) hence hypothesis one is accepted.

Risk Awareness

Our data also shows that there is a main effect of risk awareness recorded on self-disclosure ($F = 7.001$; $df\ 1$; $p < .001$). We conclude that users who are more aware of the risks of social media share less information on social media and those who are less aware of the benefits tend to share more on social media hence hypothesis two is accepted.

With the above information, we can conclude that the younger user will share more information based on more knowledge of the benefits they get from social media, and they will share less information when they know more about the risks of using social media.

Social Media Platform

H3: There is a main effect of different social media platforms on social media users' self-disclosure.

From Figure 4 we see that the social media platform does not have a main effect on users' self-disclosure ($df = 3$, $F = .635$, n/s). This means that people do not self-disclose information differently based on the social media platform they are using. This could be because the platforms being investigated have a similar mode of operation. They are heavy on pictures and videos instead of text, which could be the main reason for this finding, and based on this we reject the third hypothesis. And will recommend further investigation for future study.

H4: There are interaction effects on risk awareness, benefit awareness, and social media platforms on users' self-disclosure.

Social media Platform * Risk awareness * Benefit awareness

In Figure 4, we see that there is no main effect between the type of social media platform used, users' benefit awareness, and their risk awareness ($df = 3$, $F = .715$, n/s) which means that people do not share or share information based on the platform they use, the benefits they receive or the risk they are aware of.

Benefit Awareness * Risk Awareness

We also recorded that there is no main effect on self-disclosure based on the level of benefit and risk awareness users have ($df = 1$, $F = 0.021$, n/s) which means that a person's decision to self-disclose is not based on only the benefits and the risks they are aware of.

Benefit Awareness * Social Media Platform

Our data also shows that there is no main effect on benefit awareness and social media platforms on self-disclosure ($df = 3$, $F = .11$, n/s) which means that people do not disclose information based on the social media app alone.

Risk Awareness * Social Media Platform

The interactive effect of risk awareness and social media platforms was ($df = 3$, $F = 2.658$, $p < 0.05$) which could mean that the risks on various social media platforms vary and based on the platform users measure their risk awareness differently before self-disclosing information. For this research further investigation was not done to probe

further into which specific platforms this use case falls into but is something to investigate in future studies.

Tests of Between-subjects Effects					
Dependent Variable: BI_mean					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	46.389	15	3.093	5.03	<.001
Intercept	1131.75	1	1131.75	1840.670	<.001
B levels	22.314	1	22.314	36.291	<.001
R levels	4.305	1	4.305	7.001	0.009
SMPlatform	1.171	3	0.39	0.635	0.593
B levels * R levels	0.013	1	0.013	0.021	0.885
B levels * SMPlatform	0.021	3	0.007	0.011	0.998
R levels * SMPlatform	4.904	3	1.635	2.658	0.049
B_levels * R_levels * SMPlatform	1.319	3	0.44	0.715	0.544
Error	146.336	238	0.615		
Total	1902.09	254			
Corrected Total	192.726	253			
a. R Squared	.241 (Adjusted R Squared = .193)				

Figure 4: ANOVA Analysis

Discussion and Conclusion

While we saw that there will be no significant impact on self-disclosure with regard to benefit awareness and risk awareness, the test of between-subject effects table in Figure 4 shows us that there will be a main effect on self-disclosure in relation to risk awareness and the social media platform ($df\ 3, F=.715, sig > 0.5$). This suggests that the risks on social media platforms vary to some extent. From the data collected, benefit awareness has a main effect on self-disclosure and risk awareness also has a main effect on self-disclosure. People who know more about the benefits they get from social media tend to share more on social media while those who know less about the benefits tend to share less on social media. Likewise, people who know more about the risks of sharing on social media tend to share less on social media while people who know less about the risks of sharing on social media share more on social media platforms. For the significance level of the third factor which is a social media platform, we recorded a high significance figure which allowed us to conclude that irrespective of the social media platform, users sharing habits do not change much. Users who are more aware of the benefits they get from social media tend to share more and those who are less aware of the benefits tend to share less on social media. Benefit awareness and social media platforms alone are not strong reasons on their own to influence user self-disclosure. Risk awareness, benefit awareness and social media combined do not have a main effect on user self-disclosure. Out of the strongly disagree (1) to strongly Agree (5) the ability to stay in touch with friends recorded a mean response of 4.33. The responses for the first four questions in the survey which had to do with staying in touch with friends, sharing accomplishments for visibility, and sharing restaurants and vacation places with friends reported a high correlation of

numbers close to 1 meaning these four statements which fall under personal and societal benefits strongly influence users to engage on their favorite social media applications.

On the contrary users, most of our participants reported that their engagement does not increase based on how their content is engaged or not, and sharing vacation pictures for others' experiences which falls under social benefit was not a strong benefit of engaging on social media. This answers that, people engage on social media mainly to stay in touch with friends and for the purpose of the community.

On the flip side aside from people not wanting to be impersonated, the next high risk we recorded was people not being comfortable with others being able to post their content without permission. This statement recorded a mean response of 4.3. These mean recordings are from the 5-point Likert scale where 1 (Strongly agree) and 5 (Strongly disagree). In the risk section of the survey, we had six statements that covered personal, security, and social risk. Amongst these statements, users getting misunderstood for their posts, posts being shared without consent, and fear of being impersonated or stalked had a mean value of 0.7 - 0.85. This statistic shows that people are concerned about their personal safety and how they are perceived by others on social media.

The interactive effect between benefit awareness and social media platforms also showed that, people's sharing behavior does not really change based on the benefits they get from the platform they are using. However, we reported a low significant figure for risk awareness and user sharing on social media platforms which suggests that the risk on the platforms varies and that users share less or more based on the platform they are using. With regards to limitations of this research while we are confident that our

population is a good sample of the active social media user's database, we also understand that it may not be an accurate reflection of the many users who fall in the 18 to 30 years active social media user group. Also, self-disclosure has some other external factors like cultural norm, psychological well-being and others that were not in the scope of our research. For future studies, based on the interaction effects of risk awareness and social media platforms, we recommend that more research should be done on which platforms users use extra precaution to self-disclose and what peculiar risks users face on each platform.

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Appendix

List of survey questions

1. Which of the following platforms do you use the most? *Please answer the subsequent questions based on your choice in this question.*

- ☐ Snapchat
- ☐ TikTok
- ☐ Instagram
- ☐ Other

2. How often do you use the above social media platform selected:

- ☐ Several times a day
- ☐ About once a day
- ☐ A few times a week
- ☐ Every few weeks
- ☐ Less often
- ☐ Don't know.

3. How often do you engage (post, share stories, videos and pictures on your account)

- ☐ Several times a day
- ☐ About once a day
- ☐ A few times a week
- ☐ Every few weeks
- ☐ Less often
- ☐ Don't know.

Please rate your opinion with the following statements

Strongly Agree Agree Neutral Disagree Strongly Disagree

4. I believe that I can stay in touch with friends from anywhere on social media.

5. I can share my accomplishments on social media so people who do what I do or need my skills can find me

6. I think I can share good restaurants and other spots so my friends can visit them too.

7. I believe I can easily let all my friends know that I'm in a city through my posts.

8. I post more when people like and engage with my content.
9. In my opinion I post to share my experience at events
10. I post my vacation pictures so others can have a feel of my experience.
11. What do you think are the benefits of sharing personal content on social media?

Please rate your opinion with the following statements

Strongly Agree Agree Neutral Disagree Strongly Disagree

12. I think that sharing too much information will attract unnecessary attention.
13. I am not sure how these social media applications use my data.
14. I am aware that people can impersonate or stalk me using my posts.
15. I understand that other people might misunderstand my posts.
16. I am aware my posts can be reshared by someone else without my consent.
17. I do not want the social media platform to have the right over my pictures.
18. What do you think are the risks of sharing personal content on social media?

Please rate your opinion with the following statements

Strongly Agree Agree Neutral Disagree Strongly Disagree

19. I am willing to share screenshots from my conversations without covering the names.
20. I am willing to share screenshots from my chats anonymously.
21. I like to post live photos from my vacations so my followers can enjoy the experience with me.
22. I don't mind sharing my email and address for a giveaway.
23. I will post my graduation pictures and big life events on my social media accounts
24. I will post about lessons I learnt during a non-critical health challenge I went through.
25. I am willing to discuss my feelings about myself on social media

26. I will share that I am going to a party/ conference ahead of the event day.
27. I will often disclose intimate, personal things about myself on social media without hesitation
28. I would intimately, openly, and fully disclose who I really am in my post on social media.
29. In your own words what are some of the reasons you share personal content on social media