

# FACTORS INFLUENCING CYBERBULLYING AMONG YOUNG ADULTS: INSTAGRAM CASE STUDY



An Empirical Report Presented to the Department of Information Systems  
University of Cape Town

BY

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In fulfilment of the requirement for the Master of Commerce Degree  
in  
Information Systems

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## Acknowledgement

Firstly, I am so grateful to God for the strength and courage he bestowed upon me to pursue a master's degree. Then I would like to say a big thank you to Prof. Michael Kyobe for his supervision and meaningful contributions towards this research.

I am also incredibly grateful to my father, Prince Nelson Oladimeji, who funded my master's program and my mother, Mrs. Kemi Oladimeji, for her constant prayers and encouragement. I would also like to say a big thank you to my brothers Henry and George Oladimeji for their guidance and support.

And lastly, to my little sister, whose love I feel from thousands of miles away, I would like to say that you inspire me.

## PUBLICATION

Parts of this dissertation has been approved and published in a publication: Oladimeji, A., & Kyobe, M. (2021, March). Factors Influencing Cyberbullying on Instagram Among University Students. In *2021 Conference on Information Communications Technology and Society (ICTAS)* (pp. 139-144). IEEE.

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## ABSTRACT

Cyberbullying is one of the major problems of social networking sites, which has been known to have prolonged adverse psychological effects on social network users. Cyberbullying has been discussed a lot in the literature, but little research has been done on cyberbullying and its related factors. This study seeks to examine the factors influencing cyberbullying on Instagram among young adults. Instagram was chosen as a case study for the thesis because research shows that Instagram is the most preferred social networking site among the age cohort (18–30), who are popularly referred to as young adults. An extensive review of the literature was carried out, and six constructs (Instagram Usage, Vulnerability, Peer Pressure, Anonymity, and Instagram Features) were used to examine the influence of cyberbullying among young adults on Instagram.

This study draws from the theory of routine activity theory (RAT), which is grounded on the postulation that criminal acts can be easily committed by any individual who has the opportunity. The researcher reviewed the process and deployed a methodological and concept-centric approach to create a comprehensive conceptual model that included key factors. This dissertation is different from most cyberbullying research in the sense that it reviews cyberbullying behaviours from the context in which they occur rather than the intent or motivation of the perpetrator. The model allowed a holistic examination of factors that influenced cyberbullying behaviours on Instagram. Using a survey methodology, over 201 Instagram users who are also students at the University of Cape Town completed an instrument measuring factor influencing cyberbullying. The researcher deployed Smart PLS, a statistical package for the social sciences, to test for reliability, validity and to analyse the entire dataset. The study critically examined the factors that influence cyberbullying among young adults. The results of this dissertation indicated that peer pressure and online vulnerability have a strong significance in cyberbullying behaviours. Surprisingly, Instagram usage had a weak correlation with cyberbullying behaviours.

This study contributes significantly to the exciting research on cyberbullying as it helps identify the factors that contribute to cyberbullying behaviours. From this research, cyberbullying interventions or solutions can be accurately developed. Furthermore, from this thesis, you can have an insight into the behavioural patterns and communication styles of young adults on Instagram.

**Keywords:** Cyberbullying, Instagram, young adults, cyberbullying behaviours, adolescents

## CHAPTER 1

### **1.1. Introduction**

This chapter provides a synopsis of the empirical research that examined, analysed, and investigated the influencing factors that enable cyberbullying behaviours on social networks, using Instagram as a case study. The primary components of this chapter include the background to the study in question, the problem statement, and the corresponding aims and objectives of this research.

### **1.2. Background**

Mobile and technological devices are not only ubiquitous in these modern times, but they have also become quite indispensable as we are in the era of enhanced digital connectivity that has restructured and altered the human way of life dramatically (Gupta,2011). These devices have made daily activities and access to products and services for humans extremely simple and swift. With the massive advancement in technology, the ascendance of social media and MI applications, online communication has now superseded face-to-face interaction (Chan, Young & Harmizi, 2020). Gapsiso and Wilson's (2015) study on the "Impact of the internet on face-to-face interaction" provides much relevant information from which they conclude that the internet and social media are powerful mediums that have caused drastic social changes in the lives of the majority.

Social media is an Internet-based operation or service that enables users to swap, create, and disseminate information in a virtual community (Niknam et al., 2021). Hall (2020, p.171) posited that, "The massive adoption of social media and modern technologies has inspired a wild-spread fear of moral decline and social harm". Consequently, social media has contributed significantly to some negative side effects, such as internet addiction and cyberbullying (Field, 2018). In Hall's (2020, p. 157) view, "technology does not cause harm to us, but the patterns of technology use and internalized experiences of what it means about our connections to others can cause harm." Admittedly, social media possesses numerous silver linings. Nonetheless, the sinister side must be considered (Méndez et al., 2020). A survey by the PEW Research Centre on social media use in 2021 revealed that YouTube is the most used online social platform, with straightforward evidence that its reach is still growing. However, adults under the age of 30 stood out for their use of Instagram. The survey further reported that most people aged 18–

29 use Instagram, Snapchat, and Tik Tok at rates of (76%), (75%), and (55%), respectively (Auxier & Anderson, 2021). Likewise, contemporary studies have shown that Instagram is the most widely used of all the major social media platforms, especially among young adults under the age of 30 (Auxier & Anderson, 2021). Furthermore, recent work in the field revealed that Instagram is the worst among existing social media in terms of being detrimental to mental health (Muhammad, 2018). More particularly, the cyberbullying that is found on Instagram is quite different from other social media, as Instagram has become the cradle for hate comments and campaigns. Contemporary studies on cyberbullying attribute its cause to the applications that enable and accommodate large audiences as pictures and videos can be easily accessed and manipulated; the anonymity of perpetrators; the ubiquity of ICT devices; and lack of awareness (Alipan, Skues, & Theiler, 2021).

### **1.3. Emerging Adults**

The phase of human development spanning from about the ages of 18-29 is considered "emerging into adulthood." This period is quite different from both the adolescence that comes before it and the adulthood that comes in its wake (Arnett, 2014 p.30). Additionally, across development, there seems to be a phase where there is a shift from parent attachment to friendship attachment when emerging into adulthood. In this phase, social skills and social bonding are dependent on peer interactions and friendships. Dungo (2018) suggests that in this phase, emerging adults feel that friends rather than parents can provide a safe haven for confidence and assurance.

Arnett, Žukauskienė, & Sugimura (2014, p. 3-19) proposed five attributes that are most common when emerging into adulthood compared to other periods, which are: (ii) "the age of instability" (iii) "the age of self-focus," (iv) "the age in between," and (v) "the age of possibilities and optimism. "Also, during the life span of an emerging adult, a principal developmental task is to participate in social activities to strengthen relationships with relatives and friends. And majority of individuals in this age group are likely to own digital devices such as laptops and mobile phones, which makes it easier to say and do cruel things to others compared to what is typical in traditional face-to-face bullying situations (Gao, Zhao, & McJunkin, 2019). Relevant research in the field shows that with regards to age cohorts, cyberbullying has been known to occur with considerable frequency within this specific age group (Wang et al., 2019).

Based on the limited number of research studies conducted in this area, focusing solely on emerging adults as participants, revealed some negative side-effects that are commonly experienced by the victim, which include reduced self-confidence, self-esteem, friendships, and grades. Additionally, relevant studies have proven that cyberbullying is linked with depressive symptomology (Alipan, Skues, & Theiler, 2021).

#### **1.4. Instagram Behaviors Among Emerging Adults**

Several studies in the literature have defined social networks and communities. It is considered that online social communities are social groups of people that emerge from the Internet when a certain number of individuals hold public discussions for an extended period of time with an attachment of real human feelings and emotions in order to create interpersonal relations in cyberspace (Akar & Mardikyan, 2018). Instagram is currently one of the fastest growing network sites globally, and statistics have shown that emerging adults, commonly college or university students, are the heaviest users of Instagram (Musonera & Etienne, 2018). Instagram promotes an ideal standard of physical appearance, which is often unrealistic, and most emerging adults see these shared pictures as a real ideal of self-image. Majority of Instagram users receive validation through comments and likes from both the people they know and the ones they do not know. Studies have found that motives for using social networking sites such as Instagram among emerging adults include coolness, self-representation, and behaviours that are cunning or linked with reduced ratings of life satisfaction and high ratings of self-disclosure (Dungo, 2018 p4). Other motives include entertainment, social connection, passing time, and information seeking. Furthermore, research shows that users who rate higher for using Instagram for coolness spend quality time photoshopping and editing their photos before posting them online so that the photos can appear very appealing, hence increasing their popularity and followers. Instagram usage is also linked with depressive symptoms through social comparisons and peer pressure. Other factors that may contribute to or influence Instagram behaviour among emerging adults are peer interaction and self-representation. These factors can also be an opening for problematic behaviours such as psychological problems (Fidan, Debba, & Fidan, 2021; Dungo, 2018).

### **1.5. Research Problem, Question and Objective**

As indicated in the background above, emerging adults, who are commonly university and college students, are one of the most active age groups on social media platforms. But only a small amount of research has been done on the influencing factors that aid cyberbullying behaviours on these platforms. The National Knowledge Infrastructure in China (CNKI) revealed there are copious numbers of publications regarding cyberbullying, but only a tiny fraction of these publications put cyberbullying and its influencing factors into consideration. As of June 2020, studies show that there have been just 13 publications on “cyberbullying” and “influencing factors” out of all the 337 articles with the major keywords "cyberbullying" published after 2015. This shows that only 3.8% of cyber bullying publications explore the influencing factors. The limited study on the influencing factors that aid cyberbullying behaviours makes relevant intervention and suppression approaches inefficacious and impertinent (Zhong et al., 2021).

Due to the gravity of the consequences of cyberbullying for its victims and its rapid growth, there is an immediate and urgent need for researchers to understand the factors influencing cyberbullying so that proper intervention techniques can be accurately developed. Lastly, our understanding of the factors influencing cyberbullying on Instagram among emerging adults is still extremely limited, even though research on the factors contributing to cyberbullying on a specific platform such as Facebook has been done, yet very little is known about Instagram. This study seeks to provide a comprehensive and holistic view regarding the factors influencing cyberbullying.

Considering the background and problem statement, the following research question will be explored in this study:

1. What are the influencing factors that aid cyberbullying behaviours on Instagram among the age cohorts of 18-29?

The major objective of this research is to investigate factors that influence cyberbullying among emerging adults on Instagram. This study seeks to examine and understand the nature of

bullying and the factors influencing bullying on this platform by critically examining both the victims and perpetrators. Furthermore, it will provide a comprehensive and holistic view regarding the factors influencing cyberbullying as well as insight into the behavioural patterns that exist among emerging adults on Instagram.

## **1.6. Importance of Research**

This dissertation advances information-security studies by applying and testing a framework developed in the field of environmental criminology in an information systems domain to provide a better understanding of the factors that influence cyberbullying behaviours in young adults.

The ultimate value of this dissertation is to examine and investigate cyberbullying in an environment widely adopted by emerging young adults, as well as to understand the influencing factors that enable these cyberbullying behaviours, to develop appropriate interventions and solutions. This paper expands on the understanding, definition, behavioural pattern, and factors that enable bullying in an online environment to further research cyberbullying and its influencing factors.

## **1.7. Dissertation Overview**

The remaining section of this dissertation is organised as follows:

- Chapter 2 consists of the literature review on cyberbullying backgrounds, definitions, types, a theoretical premise using the routine activity framework, and the proposed variables that influence cyberbullying behaviours. This section further highlights the gaps that have been identified in the literature and the conceptual model developed. Based on the literature evaluation and the gaps identified, this conceptual model illustrates the relationship between the construct and the proposed outcome. The final section outlines the hypothesis formulated and tested in this study.
- Chapter 3 goes into great detail about the research design by explaining the philosophical stance taken; the research methodology, which consists of the research paradigm adopted for this study; the research purpose and strategy; data collection and analysis methods; and finally, the ethics and consideration issues taken into account for this study.

- Chapter 4 describes in detail the data analysis portion of this study. This includes the findings and results, as well as discussions of the findings and the hypothesis testing results.
- Chapter 5 contains the dissertation's conclusion. This section includes theoretical and practical implications, recommendations, and research directions.

## CHAPTER 2

### **2.1. Literature Review**

To ensure an incisive foundation of literature for this research, the review framework proposed by Lawrence E. Cohen (1979) was adopted for this study. The review process itself deployed a methodological and analytic approach that was concept centric. The literature review is also made up of essentials, which consist of consecutive and author-centric approaches where needed. It was then compiled into a detailed synopsis of the body of knowledge, complete with historical background and context.

Quality input, thorough processing, and coherent output were followed chronologically. Furthermore, peer-reviewed articles from prestigious journals were thoroughly reviewed to identify high-quality literature. For this research, a combination of several keywords, backwards (by reviewing the references of other publications), and forward (by reading additional research papers that have cited the article) searches were used in an iterative fashion to find relevant and high-quality articles. This funnelled technique was used until relatable explanations, well-known methodologies, incisive findings, and studies emerged. When no new ideas emerged, the entire process was then cogitated upon and considered to be nearing completion.

### **2.2. Background**

Cyberbullying is now being recognised as a serious public health issue that has certainly shot to the forefront of the collective conscience as a major concern. On average, about 15% of adolescent may be subjected to online victimization and harassment (Palladino et al, 2017). Consequently, a number of concerning reports where victims have resorted to suicide as a response to continuous and malicious online harassment have been recorded. These are extreme cases but nonetheless, the apparent mental and physical impact of cyberbullying from even minor incidents are disturbing (Burton & Mutongwizo, 2009; Tokunaga, 2010).

Cyberbullying and cyber harassment statistics reports among youths is high-rising and requires the immediate attention of researchers and policymakers.

The table 1 below shows 4 noteworthy cyberbullying cases, that have received notable attention.

Riley Basford (2005-2021)	“A high school student who committed suicide by shooting himself due to continuous cyberbullying and internet blackmail.”	"15 year old boy was being catfished". <a href="http://www.wwnytv.com">www.wwnytv.com</a> .
Haruma Miura (1990-2020)	A Japanese actor who shot himself after being cyberbullied and ridiculed because he had a troubled relationship with his mother and defended a colleague.	<a href="http://tw.news.yahoo.com">tw.news.yahoo.com</a> (in Chinese). Retrieved 2020-08-09.
Asley Lovelace (2002-2019)	Died by committing suicide due to depression and cyberbullying.	"Ashley Lovelace took her own life after she was bullied online". <a href="http://www.mydeathspace.com">www.mydeathspace.com</a> .
Hana Kimura (1997-2020)	Died by ingesting poison due to cyberbullying	<a href="http://Mirror Media">Mirror Media</a> (in Chinese). 2020-10-05. Retrieved 2020-10-07.

Table1: cyberbullying noteworthy cases

### 2.3. Cyberbullying Definitions

Studies have confirmed a significant link between traditional bullying and cyberbullying. This literature posits that some elements of traditional bullying also apply in the cyber context, and several findings from these studies have been replicated throughout major empirical contributions to the field. Studies also analysed the different methodological and systematic approaches that researchers have taken in order to derive cyberbullying definitions from already existing and well-established traditional bullying definitions (Bauman, 2013; Langos,

2012). However, there are still some inconsistencies in findings across studies because the definition of cyberbullying varies greatly. A lack of unanimity on the cyberbullying definition among different researchers complicates cross-study comparison and, as a result, hinders research progress (Ybarra et al., 2012).

Theoretically, these definitions primarily consist of three main characteristics: the intention to do harm (aggression), repetitiveness, and power imbalance (Iéglová & Cerna, A. 2011; Slonje & Smith, 2008). Subsequently, the proliferation of numerous technologies coupled with the ubiquitous nature of the internet and its services has proven to be challenging because, in the initial stage, studies differentiated between computer-based bullying (email) and mobile bullying (phone calls and text messages), but now, with the advent of smart phones (advanced mobile phones equipped to access the internet services), bullying definition have become more complicated (Slonje, Smith & Frisé, 2013).

Some of the early definitions have been negated for assorted reasons, but recent literature in the field has adopted a coverall classification (Slonje, Smith & Frisé, 2013). Slonje et al. further posited that distinguishing and categorising the different forms of platforms (i.e., social media, email blogging, etc.) when defining would be advantageous as this method allows the researcher to identify high-risk environments and, as a result, come to an incisive conclusion about high-risk cyberbullying behaviours. Cyberbullying is differentiated from traditional bullying by the swiftness with which information is distributed, the permanence of the material, and the availability of victims (Brewer & Kerslake, 2015). In comparison to traditional face-to-face bullying, cyberbullying is not limited by time or location, and acts can be anonymous, viewed asynchronously, repeatedly, and more widely disseminated and shared by others (Hood & Duffy, 2018). The following table below illustrates a historical list of some widely cited definitions, showing the various progressions in cyberbullying definitions over the last decades.

STUDY	CONCEPTUAL DEFINITION OF CYBERBULLYING
Patchin and Hinduja (2006)	“Wilful and repeated harm inflicted through the medium of electronic text” (p. 152)
Smith et al. (2008)	“An aggressive, intentional act carried out by a group or individual, using electronic forms of contact, repeatedly or over time against a victim who cannot easily defend him or herself” (p. 376)
Besley (2009)	“The use of information and communication technologies to support deliberate, repeated, and hostile behaviour by an individual or group, that is intended to harm others” (As cited by Tokunaga, 2010)
Price & Dagleish (2010)	“Cyberbullying is the collective label used to define forms of bullying that use electronic means such as the internet and mobile phones to aggressively and intentionally harm someone. Like “traditional” bullying, cyberbullying typically involves repeated behaviour and a power imbalance between aggressor and victim.” (p. 51)

*Table 2: cyberbullying definitions*

The main purpose of research is to enhance society and build on extant literature by improving on existing knowledge through investigating elements and developing scientific theories, concepts, and ideas that are yet to be uncovered (Bauman, 2013). A more precise definition that would clearly outline the scope of the phenomenon is "a systematic inquiry to describe, explain, predict, and control the observed phenomenon" (Dutta Roy, 2019 p. 3-7). It is upon this fundamental principle that researchers can garner conceptual and theoretical work to form a coherent body of knowledge. Unfortunately, the absence of a standardized definition leaves researchers with a mass of compelling studies that are loosely linked by common interest (Bauman, 2013).

Although the various definitions of cyberbullying are similar, a widely accepted definition continues to elude academics as researchers are uncertain about whether to categorize cyberbullying as a subtype of bullying or to characterize it as behaviour that is different from bullying. (Burton & Mutongwizo, 2009; Šléglová & Černá, 2011; Slonje et al., 2013). The main argument shared by some researchers is that the three attributes "repetition, power differential, and intent" borrowed from traditional bullying do not accurately describe the phenomenon (Cheng, 2012; Menin et al., 2021).

Considering the primary attributes of "repetition and power imbalance" within a technological environment, Smith et al. (2013) put forward the idea that these two constructs can fit into cyberbullying situations. For instance, a perpetrator's technological knowledge can be characterized as a form of power imbalance that elicits the victim's sense of helplessness because the victim lacks technological knowledge on how to defend himself in a cyber environment. While the repetitive act can be defined as the number of people who have easy access to cyberbullying materials, Smith et al.'s (2013) discussion makes a good point, but there are some flaws in their argument. Debates and arguments by other researchers on the acceptability of the conceptualization proposed by Smith et al. (2013) reveal that this framing excludes an important and significant characteristic namely anonymity and a larger scale of impact. Lastly, with regard to power imbalance, the uncertainty about conceptualizing the definition into the cyberbullying definition is that extant studies have shown that power and status can be neutralized by technology. For instance, Patchin and Hinduja (2006, p. 152) defined cyberbullying as "the wilful and repeated harm using electronic devices," leaving out the term "bullying" and the power differential characteristic (Lapidot-Lefler & Dolev-Cohen, 2015). However, some researchers continue to see power differentials as an important criterion in the definition of cyberbullying and propose conceptualizing power imbalances in the context of cyberbullying (Langos, 2012). Furthermore, another difficulty with Smith et al.'s (2013) reasoning is that the repetitive component of a cyberbullying act focuses and impacts the target and not on the actions of the perpetrator. But till date, most of the definitions have been written from the perpetrators' point of view, not the target (Cheng, 2021; Menin et al., 2021). Despite a lack of consensus among scholars about the conceptualization of power dynamics, current research on power imbalances in cyberbullying occurrences seems to focus more on the targets' lack of power.

Similarly, when we consider the attribute intent to perpetuate harm in an online environment, research showed that it was difficult to predict how different people would perceive name-calling, dark humour, and sarcasm. A poor attempt at humour that lacks paralinguistic cues can be misunderstood and become a source of dismay. There have also been instances whereby the perpetrator's intention to harm was low, i.e., they made a comment or joke where an implied social consensus existed that allowed sarcasm. However, the choice of words had a negative impact on the victim, and the victim could not handle the joke (Cheng, 2021; Baldasare, Bauman, Goldman & Robie, 2012). Bauman (2013) posits that a person's intention cannot be accurately determined but we can presume intent based on the circumstances in which the act was initiated and the outcome of the action. In other words, a user with no intent to cause harm, who innocently posts funny images or makes a sarcastic comment, can perpetuate the same harm and damage as those users who intend to cause harm. Cyberbullying is not the only aspect of information systems that has been troubled with concerns relating to intent. Behavioural information security has also raised similar concerns. Studies in this field suggest that there needs to be a proper distinction between insider variant behaviour and insider misbehaviour. The causes of these two behaviours may differ, but their harmful effects are just as severe. (Crossler, Johnston, Lowry, Warkentin, & Baskerville, 2013). By combining these two categories, we can discredit research results and reduce the efficacy of pre-existing remedies and the efficacy of policy applicability. Therefore, a thorough information security program should investigate and cover all the various ranges of behaviour if it is to be effective (Crossler et al., 2013).

Ostensibly, it has been generally accepted that, in spite of major advances in protective technology, organizational procedures, and policies, people still show massive vulnerability in defence against digital threats (Hu et al., 2012; Warkentin & Willison, 2009). Warkentin & Willison (2009) stated that the pattern of behaviours ranges from negligence and unintentional to volatile to nefarious acts. The current trajectory of this research agrees with relevant cyberbullying research and can be inferred for conceptual clarity. Therefore, it is my proposition that cyber-abuse and cyber-bullying are two different phenomena. Careless behavior that causes harm directly or indirectly within an electronic environment, whether deliberate or unintentional, should be considered "cyber-abuse." Behaviour carried out by an individual who takes advantage of cyber features, i.e., anonymity, accessibility, vulnerability, to cause harm continuously and deliberately to someone with less power or knowledge in an online environment should be seen as "cyberbullying."

## **2.4. Types of Cyberbullying**

Bullying has historically been classified into two types: “physical (hitting and pushing) and verbal (insults and taunts), both of which are characterized by direct aggression. The third type of bullying, relational bullying, is more difficult to identify. It is an indirect form of aggression that involves the negative use of peer relationships, such as spreading rumors, to facilitate social exclusion and rejection” (Kub & Feldman, 2015 p.658). Bullying's effects have grown dramatically, and the magnitude of these effects has astounded both mental health practitioners and the general public. Overall, the level of trauma associated with bullying is comparable to a child being placed outside of the home and may be even more severe than other forms of child maltreatment. Bullying has also been associated with increased levels of chronic inflammation in adults (Kub & Feldman, 2015). Bullying can take place either physically (traditional bullying) or electronically (electronic bullying) (cyberbullying).

Some research views cyberbullying as a single construct (Law et al., 2011). While some other cyberbullying research seems to differ by the precise form of bullying experienced, i.e., gender differences, or impact, cyberbullying is further subdivided into two types of media: internet bullying and mobile phone bullying (Ortega, Elipe, Mora-Calmaestra, & Vega, 2009), and some distinguish it through a variety of more specific media. Nonetheless, in recent times, the introduction of smart phones has made it possible to access more services and perform more functions making the earlier distinction problematic and creating a dilemma in differentiating between mobile phone and internet bullying (Smith et al., 2008). According to Smith et al. (2008), their studies used seven major media types described by respondents as differentiating cyberbullying, i.e., mobile phone calls, text messages, video and images, emails, chat rooms, and instant messages. A similar 9-item scale was used by Hinduja and Patchin (2010). In the case of Wachs and Wolf (2011), they used a five-item scale that covered similar items but combined some features, such as text messaging and phone calls. The list of cyberbullying and aggressions is not exhaustive because new forms of cyberbullying emerge as technology advances (Smith, 2012). Rivers, and Norset (2010) also investigated into cyberbullying, they focused different categories of abusive content of phone messages and emails. Some of the categories are insults/ name calling, physical violence, hate speech etc. Willard (2007) proposed that an alternative would be to concentrate on the type of action performed and its contents. He went on to describe seven types of flaming: online harassment, online staking, denigration, exclusions-related, name-calling, swearing, trolling.

## **2.5. Theoretical Premise**

A considerable amount of literature has focused on using the Theory of Planned Behaviour (TPB) to understand cyberbullying behaviours on social media platforms. TPB focuses on finding determinant factors that have influenced an individual's intention to cyberbully victims. TPB's main variables include subjective norms, perceived behavioural control, and attitude (Jafarkarim et al., 2017). The theory is found to be well supported by empirical evidence in general. Attitudes toward behaviour, subjective norms, and perceived behavioural control can all be used to accurately predict intentions to perform various types of behaviours, and these intentions, along with perceptions of behavioural control, account for a significant amount of variance in actual behaviour. Although attitudes, subjective norms, and perceived behavioural control are shown to be related to appropriate sets of salient behaviours and normative and control beliefs about the behaviour, the exact nature of these relationships remains unknown (Ajzen, 1991). Furthermore, the results of some related studies have also shown that, due to circumstantial limitations, behavioural intentions will not, in most cases, lead to actual behaviour (Sniehotta, 2009; Norberg, Horne & Horne, 2007). Other studies have explored cyberbullying on similar social media platforms such as Facebook and Twitter. (Dredge, Gleeson, & De la Piedad Garcia, 2014; Chan, Kok, Ong, & Yuventasari, 2013).

Ndyave & Kyobe's (2019) study on factors that influence mobile bully-victims' behaviour on social media provided relevant information and adopted the "Theory of Social Network". The network theory provides a quantitative method for characterizing social structure at both the individual and population levels. A theory that explains bully-victim behaviour and factors that influence cyber-bully behaviour on social media. The theory of social networks refers to individuals as nodes and the relationships between them and others within the network as ties. This theory further explicates how nodes interrelate within a network. This theory puts less focus on the characteristics of the individual and focuses more on the relationship of ties within the network. Also, within the network, there is a chance of random people joining the network as the network becomes bigger with more interactions, and even though the theory of social networks explains how random people meet, the ties between them might be subjective.

Another similar study, Chan et al. (2013) in their research on social cues and cyberbullying on Facebook, noted factors that can influence bullying behaviours on social media. The research was based on the Social Information Processing Theory (SIP), which explains interpersonal

communication between individuals and computer-mediated communication without non-verbal cues overtime online (Walther, 2015). The SIP theory argues that interpersonal relationships online can show similar relational dimensions and properties as face-to-face relationships. It goes on to say that these online relationships may also facilitate certain behaviors that would not have developed in a face-to-face setting. (Walther,1992).

While these studies have added significantly to our knowledge of cyberbullying behaviour, there are some limitations to these theories. The theory of social networks focuses more on the relationship between the ties and less on the characteristics of the individual, while SIP theory's focus is on how communicators adapt to the absence of non-verbal cues when using a medium that generally restricts textual symbols (Walther,2015). To investigate factors influencing cyberbullying activities on Instagram, this study chooses to focus on the "Routine Activity Theory."

### **2.5.1. Routine Activity Theory**

Understanding crime events in their spatiotemporal context is a crucial component of criminology research, with significant implications for enhancing policies and developing suitable strategies and interventions. Theoretical progressions under the domain of opportunity theory have highlighted the advantages of diverting attention from people's criminal motivations to the contexts in which crime events occur. These approaches produce concrete and immediate policy and practice strategies because they focus on the crime event rather than the intrinsic motivations of the actors. Implementing these strategies has the potential to significantly reduce crime rates (Groff, 2007; Miró, 2014).

Routine Activity Theory (RAT) has received considerable attention in the literature on cyberbullying. Lawrence E. Cohen and Marcus Felson (1979) originated this theory. But it was developed later by Felson. The fundamental hypothesis of Cohen and Marcus suggests that “postmodernity has lubricated the convergence in time and space of possible offenders with the aim of committing crime against suitable victims in the absence of capable protectors” (Groff, 2007; p. 75-103). Routine activity theory is, in essence, an attempt to uncover illegal behaviour and tendencies at a macro-level by explaining variations in crime statistics (Cohen & Felson, 1979). It is rooted in criminal events, the spread and grouping in space and time of the substantial attributes that make individuals up, and less in the search for criminals' intentions. This provides a benchmark for concrete and individualized crime patterns as well

as facilitates the implementation of real policies and practices intended to change the necessary elements that make a crime possible, thereby mitigating it (Tilley, 2009). Cohen and Felson (1979) highlighted a significant contradiction in their seminal article, "Social Change and Crime Rate Trends: A Routine Activity Approach": "While indicators of well-being and socioeconomic factors that had previously been considered causes of criminal activity—such as poverty, lack of education, and unemployment had generally improved in the 1960s, crime statistics reports suggest a significant spike in incidence during these years". To address this paradox, they focused on modifications in structural patterns of people's everyday activities as well as how the reconfiguration offered more opportunities for crime, potentially influencing trends in the prevalence of certain types of crime, specifically crimes involving persons or property (Felson & Cohen, 1980).

The RAT theory describes in detail "how criminal events occur through three essential elements that coincide in space and time in the course of daily activities: (a) a potential offender with criminal intent; (b) a suitable target or victim; and (c) the absence of protection" (Miró, 2014 p. 1-7). Related studies on cyberbullying have shown that the RAT theory is a viable and feasible elucidation of cyberbullying risk among young adults and teenagers (Navarro & Jasinski, 2012). To a considerable extent, young adults explore social media without adequate supervision. Furthermore, the ubiquitous nature of digital devices adds an extra layer of ambiguity, providing a suitable, motivated offender with a wide range of what-might-be-suitable targets. The availability of suitable victims, combined with a lack of supervision and motivated targets, can be a dangerous combination that leads to cyberbullying (Mesch, 2009; Navarro & Jasinski, 2012).



*Fig 1: Routine Activity theory*

### 2.5.2 Element of Routine Activity Theory and Particularization of the Framework

(i) Suitable Target: In the context of suitable targets, the preparators' perception of the target's vulnerability influences the choice to commit crime. In simpler terms, the more suitable and accessible the target, the higher the likelihood that crime will occur (Miró, 2014). In terms of vulnerability, it can be agreed that vulnerable groups attract the attention of bullies and criminals as they are identified as easy targets. Similarly, the concept of peer pressure refers to the belief that peer groups expect conformity to their norms, thereby creating space for delinquency. Literature has also revealed that, in particular, young adults and adolescents are highly vulnerable to social influence and peer pressure (Mounts & Steinberg, 1995), making them easy and suitable targets in an online environment.

(ii) Absence of a capable guardian: Guardianship can be interpreted in different ways. Instinctively, one might think of it as a policy because it helps prevent crime, but guardianship has a much broader meaning. On the contrary, it is the presence of ordinary people that can help prevent crime. For example, if a criminal is motivated to commit a crime, the possibility of perpetuating the criminal act is low if there are large number of people present. These people act as guardians simply by being present, as there may be a reaction if they witness a crime. On the other hand, the crime is more likely to occur if the guardian is absent (Argun & Dağlar, 2016; Groff, 2008.) As a result of this, anonymity plays a significant role in the online environment. In a series of experiments, several researchers discovered that when people were anonymous, they were more aggressive and violent than when they were identified by name tags. The observed aggressive behaviour showed people's anti-social tendencies, which were frequently suppressed in order to conform to social norms (Jordan, 2019; Askari, Jalilvand & Neshati, 2019).

(iii) Motivated offender: Despite the fact that a motivated offender is one of the three central elements, routine activity theory is uninterested in it. Cohen and Felson simply assume the presence of a motivated offender. They aren't concerned with why the offender is motivated. This is where the theory differs from most criminological theories, which are concerned with why an offender wishes to commit a crime. Rather, the routine activity theory focuses on the context in which crime occurs. Everyday activities can put people in situations that make them easy targets for criminals. (Argun & Dağlar, 2016). In context of this, the focus is not on the motivation of the perpetrator but rather on the affordances that Instagram provides, such as the

features, i.e., stories, direct messaging, etc., through which users can easily and readily carry out cyberbullying behaviours (Paramboukis, Skues & Wise, 2016). Likewise, with Instagram usage, relevant literature reveals that excessive use of Instagram is linked with a host of physical and psychological behaviours that could potentially result in cyberbullying behaviours (Sanz-Blas, Buzova & Miquel-Romero, 2019).



Figure 2: New theoretical framework (Routine Activity theory)

## 2.6 Conceptual Model

The below conceptual model, (figure 2), was developed based on the literature review. This model can be used to critically investigate the factors that influence cyberbullying behaviours in an online environment.

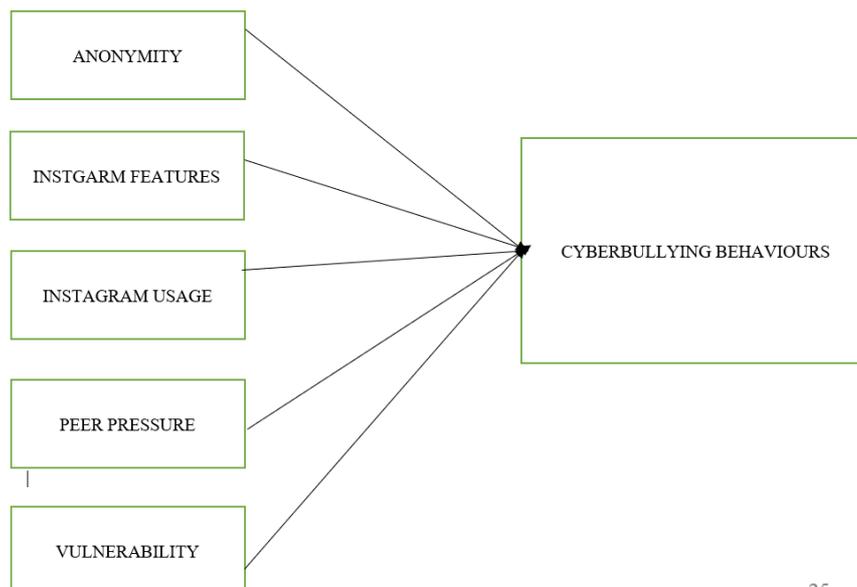


Fig 3: Conceptual Model for factors influencing cyberbullying behaviours

### 2.6.1. Definition Of Constructs

Constructs	Descriptions	Sources
Anonymity	Anonymity in context to this research refers to the act of concealing identity in an online environment. The main idea behind anonymity in an online environment is that the digital footprint of the user remains untraceable. There is considerable evidence that show that anonymity is the reason antisocial behaviours are exhibited in an online environment.	(Jordan,2019); (Chui,2014)
Instagram Features	Instagram features is referred to as the array of various options and affordance that Instagram provided to users such as filters, commenting, direct messaging, Instagram stories, etc.	(Paramboukis, Skues & Wise, 2016).
Instagram Usage	This refers to an excessive amount of time spent in an online environment. Literature has revealed that there is a positive relationship between time spent online and problematic internet use thereby resulting in a behavioural outcome.	(Sanz-Blas, Buzova & Miquel-Romero, 2019)
Peer Pressure	The act of reasoning and conforming to a set of peer-prescribed guidelines is referred to as peer pressure. Peer pressure has both advantages and disadvantages; and while literature has shown that it can help promote individual development and a sense of identity, research also shows that social media can also boost the sinister side of it.	(Anderson & Jiang,2018). (Kyobe et al., 2016).
Online Vulnerability	Online vulnerability refers to Weaknesses that could lead to an internet user becoming a victim of an Internet Crime.	(Buglass, Binder, Betts & Underwood, 2017).
Cyberbullying behaviours	Cyberbullying behaviours refers to aggressive behaviours carried out in an online environment by an individual or group of people using information and communication technology as a form contact to reach other users (victims).	(Patterson, Closson & Patry, 2019); (Livingstone, & Smith, 2014).

Table 3: Definition of constructs

### 2.7. Hypothesis Development

This study focuses on the cyberbullying behaviours of young adults using Instagram as a case study. Based on the above body of literature around Routine Activity Theory (RAT), the

hypotheses below are framed. In the present study, the theoretical expectation is tested for factors influencing cyberbullying.

#### 2.7.1. Anonymity

In social psychology and communications studies, a theory known as the social identity model of de-individuation effects (SIDE MODEL) was developed. It is a technological theory that explains the effects of computer-mediated communication. The SIDE model suggests that anonymity changes the salience of personal and social identity by having a profound effect on group behaviour. It further explicates the phenomenon that occurs in crowds; it states that people exhibit rational behaviours that they would not normally exhibit amid crowds (Reicher, Spears & Postmes, 1995). The main motive behind social media is information sharing, making the frequent exchange of content and information a commonality among users. However, some users make efforts to erase their digital marks and footprints by posting content and concealing their identities to partake in anti-social behaviors. (Zhang & Kizilce, 2014). Furthermore, Kowalski, Limber, and Agatston (2008) pointed out in their studies that students who would not partake in traditional bullying have tendencies to take part in cyberbullying because they believe that, due to anonymity, the concerns of being caught and socially sanctioned are removed.

Anonymity aids the prominence of social identity. It also provides a means for users with malicious intent to commit crimes without revealing their identities (Reicher, Spears, & Postmes, 1995). A study on anonymity for Instagram users showed that the Instagram platform enables anonymity. On Instagram, when setting up a new profile, users can decide to use their real name or a pseudonym, making them unidentifiable (Askari, Jalilvand & Neshati, 2019).

*H<sub>1</sub>. Instagram enables anonymity thereby resulting to cyberbully behaviors on Instagram.*

#### 2.7.2. Instagram Features

Current research shows that the generation of young people today are more narcissistic compared to the previous generation. The Statistical increase in scores on narcissism measurement positively associate with the widespread use of social networking sites such as Instagram. Instagram being a photo and video sharing social networking sites that elicits users to edit photos and videos with readily available filters and special effects before posting them onto the sites. formulating upon the integration of preceding research on social media

and the affordance that Instagram provides, it can be concluded that attention seeking, online hate, gratification and exhibitionism is facilitated on Instagram by excessive usage and specific image-based applications, specification, and functions (Paramboukis, Skues & Wise, 2016).

First, Instagram helps to facilitate the manipulation of photos and videos that can be used to create a specific impression of others, by glamorizing and displaying a false representation of their actual lives of beliefs. These behaviors are in line with grandiose narcissism traits such as attention-seeking, vanity, self-promotion, and exhibitionism. Secondly, the features that allow users to like and comment I.e. (comment sections, direct messaging) do not need the formation of a deeper relationship. This feature may appeal to narcissistic individuals and detrimental to someone who is vulnerable online. Furthermore, considering the private setting feature on Instagram, studies show that participants who keep their account private still accept requests from strangers. The contradiction and inconsistency regarding the way majority of Instagram users use the privacy setting reflects a lack of technical knowledge about account setting, how they operate than any deliberate strategy for information dissemination (Paramboukis, Skues & Wise, 2016).

Hence:

*H2: Instagram offers users with varieties of exciting features that can enable cyberbullying behaviours*

### 2.7.3. Instagram Usage

Internet usage has increased dramatically, and internet service providers (ISP) have also provided more online services. Due to the ubiquitous nature, of the internet and the services provided, individuals now have easy access to social media applications, increasing usage, particularly among young adults. Concerning Instagram, research has shown that as adolescents become more popular on Instagram, it also increases the chance of developing an addiction to Instagram usage and experience cyber aggressions and victimizations (Fabris et al; 2020). Studies further shows that time spent online seems to be positively associated with cyberbullying perpetrations (Park et al; 2021). Hence excessive usage of Instagram, a photo-sharing social network has peculiar attributes that could make users prone to negative consequences, the findings of research generally suggested that frequent use of Instagram will have a negative effect or association for vulnerable users or users who tend to follow with strangers on the platform (Lup, Trub & Rosenthal, 2015).

Hence:

*H3: Excessive Instagram usage can lead to a host of psychological behaviours and as a result influence cyberbullying behaviours on Instagram.*

#### 2.7.4. Peer pressure

Kemph, Erik, & Erikson's (1968) study on youth and crisis referred to peer pressure as a search for identity. These close interactions young adults have amongst themselves make them vulnerable to peer pressure and they are likely to be susceptible to the problematic behaviours of their peers (Chan & Chan, 2013). For example, young adults are forced to keep up with the norms of their circle or group (Mouittapa et al., 2004). On Instagram, users post images of the type of luxurious life they live for others to see and comment on. This in turn leads to other users trying to emulate their lifestyles; they post harsh comments or judge them. This continuous comparison between users may lead to a host of physiological issues (Kırcaburun & Griffiths, 2019). Indrawan's (2018) study revealed that cyberbullying on Instagram is commonly found in the comment section due to the particular features that enable users to react and comment on other users' posts, thus making it possible to leave aggressive comments publicly on controversial posts or images of other users. Likewise, research on the tenuous relationship between teen self-identity and Instagram addressed the question of "what makes Instagram a mental strain for young people". It revealed that Instagram, being a photo-sharing site, users are stacked with what seems to be an endless barrage of images that can conveniently contribute to the feeling of inadequacy and low self-esteem (Wiederhold, 2018). Peer pressure has been linked to a lot of online behaviours. Peer pressure is referred to as "a primary mechanism for transmitting group norms and maintaining loyalty among members (Clasen & Brown, 1985). Also, literature has revealed that photo-sharing platforms like Instagram have the potential to give users a feeling of inadequacy and low self-esteem, making users feel pressured to act a certain way or engage in certain online activities (Wiederhold, 2018).

In Riesmeyer et al.'s (2021) view, after a critical analysis regarding adolescents and their perceptions and coping with peer pressure on Instagram, they put forward the idea that adolescents perceive peer pressure in five dimensions, which are expressed as peer norms:

(I) fear of missing out: This type of pressure stems from the perception that if Instagram is not used, one will be cut off from communication with others. Adolescents are afraid of missing out on something important. The story function heightens the pressure of missing something

because this content is only available for a limited time. Furthermore, peers appear to set the standard for using Instagram on a regular basis, and only their content is shared. Non-use of the application results in automatic exclusion from peer communication.

(ii) communication urge: One impact of the fear of missing out is the peers' influence to always be online and reachable, which is often perceived as a social norm. Peers encourage adolescents to respond to contributions (e.g., comment, share, or like) and to follow accounts to stay up to date. This demand is perceived as a source of stress, particularly given the amount of time available and required, as well as the distractions. Despite the resolution not to react, peer influence is strong enough to break the resolution. Adolescents are compelled to share content with others and present themselves on Instagram at the same time, which can be strenuous. Adolescents describe this as a "need to communicate," and they do not question it. Taking photos and uploading them to the internet is done automatically as part of one's daily routine.

(iii) conformity: This is interpreted as an automatism. Adolescents must behave in accordance with the peer norm. This standard is comprised of the application's use (downloading the app). Those who do not use Instagram are not only excluded from peer group communication, but they are also sanctioned for it (e.g., ridiculed). What adolescents fear the most is being excluded entirely from the group. As a result of this pressure, concerns about Instagram are suppressed. This peer norm also has an impact on how people present themselves. Pictures are created to conform to the demands of peers while avoiding potential sanctions (e.g., negative reactions). Adolescents have come to internalize this norm and automatically adapt their self-presentation, without or without thinking about it, but still acting in accordance with their peers' expectations.

(iv) Orientation towards the aesthetic ideals of the group: Adolescents feel pressured to show their most beautiful side when they post photos. The belief is that one should perfectly present oneself and, if necessary, stage oneself. There is a strong desire to only upload good pictures. At the same time, adolescents internalise glamorous content on Instagram, perceive it to be the norm, adapt to this norm, and thus force peers to present themselves on Instagram in accordance with the norm, which can influence their own presentation. The peer group keeps track of who posts what and how. An ideal image of oneself to be displayed on Instagram allows adolescents to present themselves solely through visual elements. There have been reports of several attempts or staged photo shoots to capture the "perfect moments". It is also important to note that, on average, only positive emotions and moments that are mostly unrealistic are shared.

(iv) Reflection of external impact: The external impact is reflected. Adolescents anticipate the importance of their own influence on others. They are constantly assessing their external impact and the reactions of their peers. At the same time, they feel the pressure of having to control which images of themselves are available: "How others see you." There is a desire to control that somehow. Adolescents must strive to make a positive impression on their peers and adjust their self-presentation accordingly. Positive feedback (measurable in the form of likes and comments) encourages them to continue adapting to the perceived peer norm.

Hence:

*H<sub>4</sub>: Instagram possesses features that can contribute to the feeling of self-doubt and inadequacy which will lead to physiological issues resulting in cyberbullying behaviors.*

#### 2.7.5. Online Vulnerability

To protect users' privacy, social networking sites (SNS) provide their private policies (PP) so that they can retain users' trust and at the same time comply with cyber law. The PP includes information on the level of protection that they offer and how the social networking sites and other third parties will make use of users' information. However, these PPs do not state that the SNS site will be held responsible for who gets access to and views information that users post online. Furthermore, on Instagram, users are allowed to link their accounts with similar SNS sites like Facebook, Twitter, and LinkedIn. It allows users to post personal information about themselves online and view information about what others are doing. The information that is being accessed on the victim's page may facilitate a conception of impressions relating to the personality of a cyberbully victim. Examples of such impressions include the victim being perceived as an introvert, less dominant, naive, or ostracized (Talib et al., 2014). Notably, technology allows a user some level of control. A study cited that as a user's social network expands, their privacy level moves beyond the privacy setting and becomes a social networking problem (Atiso & Kammer, 2018). There are a lot of users that do not have enough knowledge about the vulnerability of their information while using social networks, and there are many people who are keen on collecting people's information, either legally or illegally, for personal gain, and unfortunately, social media such as Instagram serve as a strategic source where such malicious behaviour can be perpetuated, thus making innocent users an easy target for online attacks (Talib et al., 2014).

Furthermore, vulnerability has a strong social association with cyberbullying activities. Livingstone & Smith (2014) discussed that social media users who are less experienced in online environments have a high tendency to be harassed online due to a lack of knowledge of the online environment, and this is most common among new users who do not fully understand what they are getting into. Furthermore, the result of a study that took into account social and online vulnerability and the need for policies that would promote the social and educational development of all students predicts a significant percentage of those involved in bullying and cyberbullying.

Hence:

*H<sub>5</sub>: lack of knowledge regarding private setting, Instagram policies and the vulnerability of user's information on Instagram can enable cyberbullying behaviours.*

#### 2.7.7. Cyberbullying Behaviors

The issue of cyberbullying has been classified as a new form of antisocial behavior in the context of online communication over the last decade. This problem emerged because of evolution in technology and a change in the pattern of interpersonal communication (Sticca, Ruggieri, Alsaker, & Perren, 2013). A lot of studies have reviewed cyberbullying behaviours and its risk factor especially among adolescents (Barlett & Christopher 2015; Cappadocia, Craig & Pepler, 2013; Sticca, Ruggieri, Alsaker, & Perren, 2013). Their studies identified and included a range of variables that is believed to increase the odds of engaging or experiencing cyberbullying. These factors include frequency of online communication, Gender, moral disengagement, Anonymity, school related factors, related individual differences, self-esteem but in context to Instagram, Oladimeji, & Kyobe, (2021) posit that Instagram being a photo sharing application encouraged a host of hostile behaviours. Behaviours such as “Instagram Addiction” due to excessive usage, “Anonymity” that Instagram allows users to create multiple accounts thereby enabling perpetrators to conceal their identities, “peer pressure” as a lot of unrealistic lifestyles and body image that people tend to later emulate is found on Instagram, “Online vulnerability” as Instagram allows user to link their account with other social media account. These behaviours are assumed to be the factors influencing cyberbullying on Instagram.

## CHAPTER 3

### 3.1 Research Methodology

Methodology is the theory of activity organization (Novikov & Novikov, 2019). According to Myers (2009), the design of research should illustrate a rundown of procedures, road maps, actions, and strategies used in research. As a result, this chapter presents the series of actions taken and decisions made throughout this research.

### 3.2 Research Philosophy

The main objective of this study is to explore cyberbullying in an online environment using Instagram as a case study to provide a comprehensive and holistic view regarding the factors influencing cyberbullying. The descriptive conceptual model in this study enables the identification of theoretical principles upon which hypotheses have been built.

In any research project, the researcher needs to explicitly consider and state all philosophical assumptions, as these assumptions are relevant and have consequences for the research project as a whole (Holden and Lynch, 2004). Ontology, epistemology, and methodology are the three research fields that make up philosophical assumption. Ontology is concerned with the nature of reality and the distinction between observable and non-observable reality. Epistemology examines how to observe this reality (if it is observable) and the relationship between the observer and this reality (Guba and Lincoln, 1994; Gelo, 2012). Specifically, epistemology specifically answers the question, "What is the nature of knowledge?" The following discussion elaborates on the philosophical position and assumptions that guide this research.

#### 3.2.1 Ontology

The ontological approach adopted in this study is the objectivist approach. "Objectivism takes the view that there is a reality or realm of objects and facts that exist independently of the mind. It holds that there is only one correct description of reality regardless of whether we have knowledge of it or not" (Saunders et al., 2007 p. 133; Orlikowski & Baroudi, 1991). This current study adopts an objectivist to allow the exploration of cyberbullying and the influencing factors as a social phenomenon and the researcher partaking in or being influenced by the emergent social realities of the research participants.

### 3.2.2 Epistemology

The goal of this study is to objectively evaluate factors impacting cyberbullying among university students and on Instagram, hence a positivistic approach is taken. Positivism can be described in a broader sense as a way of looking at the world using scientific methods. Positivism holds that only those objects or events that can be directly experienced should be the subject of scientific inquiry (Saunders et al., 2009). A scientific technique can be used to find and understand objectively accurate truths about the human world. Orlikowski and Baroudi (1991) define a positivistic study as one in which variables are quantified and conclusions about a phenomenon are taken from a specified sample of a target population. This is consistent with this study because the relationship between the independent variables (anonymity, vulnerability, peer pressure, Instagram usage, and Instagram features) and the dependent variable (cyberbullying behaviour) will be empirically measured.

### 3.3 Purpose of Research

According to Neuman (1994), descriptive research is conducted when attempting to describe a phenomenon. If the researcher wants to investigate a new phenomenon, the research is said to be exploratory, and if he wants to explain why something happened, the research is said to be explanatory. As a result, the goal of this study is explanatory. Explanatory research seeks to discover causal relationships between variables. It is carried out based on theory-based expectations about how (and why) variables should be related. A hypothesis can be either fundamental (i.e., there is an existing relationship) or directional (positive or negative) (Malhotra, 1998). Explanatory research, in the context of this study, describes hypotheses and tests for positive and negative relationships between independent and dependent variables. This research will aid in the discovery of causal relationships between variables, the investigation of the underlying root cause, and provide a basis for generalization.

### 3.4 Research Approach

In this study, a deductive approach is used. This approach is appropriate because the goal of this study is not to develop a new theory, as in the case of the inductive approach (Creswell,

2009), but rather to test the conceptual model informed by literature and existing theoretical work (Creswell, 2009). This method entails developing hypotheses based on existing theoretical work and testing these hypotheses to confirm or reject them (Bhattacharjee, 2012). This approach was followed in this study by conducting an extensive review of literature on key areas related to the topic of the study.

### 3.5 Research strategy

A quality survey that was formulated for the sole purpose of testing this study's hypothesis, answering the research question, and understanding the research objective was developed. To gather data from participants, the survey used a structured questionnaire. The use of questionnaires was suitable for this study because they are effective enough to collect data about a population that is too large to measure directly. More importantly, it agrees with the philosophical stance taken for this research, which will assist the researcher in conducting the research objectively, i.e., without engagement with the participants. Furthermore, it is cost-effective, saves time and effort normally required to conduct research.

### 3.6 Sampling

A sample is referred to as a subset of a population, a sample is selected so that there can be a representative of larger population since we cannot study the entire population (Acharya et al; 2013).

#### 3.6.1 Target population

The primary concern of the target population is the specific sample to be studied. The target population (unit of analysis) for this study was primarily Instagram users. The researcher focused on students at the University of Cape Town who are Instagram users between the ages of 18 and 30. Due to ethical issues involved in conducting research on participants below the age of 18, the researcher only used participants over the age of 18. Additionally, the researcher believes that the level of exposure and the technical knowledge regarding the constructs being observed will be better understood and relatable by educated Instagram users.

#### 3.6.2 Sampling Frame and Size

The researcher reached out to the research office at the University of Cape Town to gain access to the student at the university. The study sample was derived from this. According to Saunders et al. (2007), larger sample sizes should be used when attempting to obtain a representative sample with a low and minimal margin of error. However, when it came to online social networking sites, the average sample size was 200+ users. This thesis's sample consists of 201

Instagram users from the University of Cape Town. Thus, the numbers are sufficient to ensure low marginal error and a representative sample size.

### **3.7 Data Collection and Instrument**

These studies compiled data using quantitative methods, and the conceptual model was tested by examining the relationships between variables. Specific approaches are required for certain types of research problems. For example, a quantitative method is deemed the most appropriate for research that seeks to identify factors that influence an outcome or research that seeks to understand the impact of a specific variable on an outcome. It is also a suitable approach to take when putting a theory to the test (Creswell, 2009). The choice of a quantitative method as the primary method for data collection and a research instrument resonated with the research philosophy used for this study. The questionnaire was used as the research instrument for this thesis. The questionnaire was formulated based on an instrument that was used in previous studies to examine cyberbullying and was modified for the context of Instagram and young adults. A pilot survey of 10 participants (5 males and 5 females in the age group of 18–30) was conducted just to confirm that the questions were suitable and properly defined the problem. After much deliberation, some questions were considered problematic and were restructured or removed. Close-ended questions were used to assess each construct in the framework. The items were assessed using a five-point Likert scale, with 1 representing the lowest (strongly disagree) and 5 representing the highest (strongly agree) values, respectively. Table 4 depicts the correspondence between construct items and hypotheses in the questionnaire. For the distribution of the questionnaire, the researcher made use of Qualtrics, a web-based survey service that permits the creation of surveys, online collection, and storage of data. Using Qualtrics helped eliminate costs, saved time, and ensured that there was a wider reach of the subject.

The questionnaire consisted of demographic questions and variables from a conceptual model that contained anonymity, Instagram usage, Instagram features, peer pressure, and vulnerability. Table 4 below shows the questions and studies that were adopted from them.

Variable	Questions	Sources
Anonymity	<p>Do you agree with the statement that people take advantage of anonymity to perpetuate cyberbullying behaviours?</p> <p>I have been bullied on Instagram via an unidentified or fake account</p> <p>I have a separate Instagram account that I use whenever you want to conceal my identity i.e., Ghost/ false account</p>	<p>Reicher, Spears &amp; Postmes, 1995). (Askari, Jalilvand &amp; Neshati, 2019).</p>
Instagram Features	<p>The privacy setting on Instagram helps reduces cyberbullying.</p> <p>Bullying occurs mostly in the comment section.</p> <p>Bullying on Instagram occurs mostly via direct messaging?</p>	<p>Paramboukis, Skues &amp; Wise, 2016).</p>
Instagram Usage	<p>Excessive Instagram use can reduce self- Esteem?</p> <p>Excessive Instagram usage can spontaneously and unintentionally lead you to practice self-comparison?</p> <p>I compare myself a lot when viewing contents and posts Instagram?</p>	<p>(Lup , Trub &amp; Rosenthal, 2015) (Park et al; 2021).</p>

Peer Pressure	<p>I have felt pressured to modify your pictures to follow trends that can boost your online reputation or gain more Instagram followers?</p> <p>I have felt pressured from other users' content or gone above your means to go to aesthetically pleasing places just to create content and feeds for online gratification or followers?</p> <p>Do you agree with the statement that Instagram can sometimes serves as a toxic mirror through which people view themselves and emulate lifestyles that can sometimes be harmful or toxic?</p>	<p>(Moultapa et al; 2004). (Chan &amp; Chan, 2013). (Clasen &amp; Brown,1985).</p>
Online Vulnerability	<p>Users who are less experienced online are more likely to be harassed.</p> <p>Linking your Instagram account with other social media account increase vulnerability?</p> <p>Accepting requests from strangers when your account is on the privacy settings increases vulnerability?</p>	<p>(Talib et al., 2014) (Livingstone &amp; Smith, 2014) (Atiso &amp; Kammer,2018)</p>
Cyberbullying behaviour	<p>I have bullied or been bullied by someone on Instagram due to one of the following reasons (Peer pressure; I took advantage /someone took advantage of (my) vulnerability, I felt invisible online, excessive usage?</p> <p>I experienced cyberbullying i.e., stalking, hate comment, trolling, etc. more on Instagram compared to other social media?</p> <p>I have been harassed, received threats and insults via Instagram?</p>	<p>Patterson, Closson &amp; Patry, (2019); Livingstone, &amp; Smith, (2014).</p>

*Table 4: variables, Questions, and sources.*

### 3.8 Reliability and Validity of Research Instrument

There are two phases required to ensure the construct's and measurement instrument's reliability and validity. The first stage entails identifying existing items or creating new ones, while the second stage necessitates the evaluation of construct validity (Moore and Benbasat, 1991). The essential objective of testing for reliability is to determine the consistency and dependability of construct measures (Neuman, 1994; Bhattacharjee, 2012). According to Creswell (2008), when a research instrument is modified, the reliability and validity used in the study from which it was adapted may no longer apply to the new instrument. As a result, a validity and reliability test is required during the current study's data analysis. A reliability test can be performed in four ways: split-half reliability, inter reliability, internal consistency reliability, and test-retest reliability. The researcher used internal-consistency reliability to test the instrument's reliability for this study. This was accomplished by measuring the various components of a structure to ensure consistency. The Cronbach Alpha and composite reliability were calculated as part of the measurement (CR). These tests were chosen because they have academic support, and their results are known to be reliable. Furthermore, the researcher increased reliability by first conducting a pilot test and then conceptualizing the construct (Neuman, 1994). The researcher made sure to clearly define the constructs being measured in the literature review. According to Neuman (1994), each measure should only indicate one concept, and a clear theoretical definition of the construct should be given. Composite reliability scores equal to or greater than 0.70 are regarded as acceptable (Gefen & Straub, 2005).

Validity is the degree to which a concept is accurately measured in a quantitative study. There is a validity test for hypotheses testing procedures and a validity test conducted for measurement procedures (Bhattacharjee, 2012). For this research, construct validity and content validity tests were used as measurement procedures. Content validity ensures that the full definition of a construct is represented in a measure. In the case of construct validity, it addresses whether a generalization can be made from the measurement questions to the constructs. In simpler terms, construct validity measures check if the measurement questions measure the presence of the construct they were meant for. This is also in line with Bhattacharjee's (2012) posits that a validity test doesn't have a direct measurement but can be ensured by approaching researchers in the domain.

Furthermore, in addition to the above-listed tests, the researcher was cautious about threats to validity that could have been arousing. Hence, internal and external validity were examined and well accounted for (Creswell, 2009). Pertaining to the internal validity test that checks for the correctness and ability to draw interpretations from the target population (Bhattacharjee, 2012), the sampling technique for this thesis guaranteed that the characteristics of the participants were distributed equally. Also, the researcher aimed at a large number of participants, which was appropriate for this purpose. External validity helped to check that there were no wrong inferences made from the sample data (Bhattacharjee, 2012). In view of this, it was ensured by the researcher that among the representatives in the sample frame and the demographic portion of the instrument, there was an adequate level of representativeness. Regarding the convergent validity of the variable, correlation patterns between variables and constructs were observed (Petter et al., 2007).

Discriminant validity helps to check that a construct measure is unique, empirically and adequately represents the phenomena of interest that other measures in a structural equation do not measure (Hair et al., 2010). Farrell (2010, p. 324) established that if the discriminant validity is not established, "the constructs may have an influence on the variation of more than just the observed variable to which they are theoretically related," which in turn results in "researchers being uncertain of results confirming if the hypothesized structural paths are real or if they are as a result of statistical discrepancies." The researcher carried out discriminant validity by analysing item-cross loadings at the indicator level. Discriminant validity was also accessed at the construct level by comparing the square root of each construct's average variance extracted against its correlation with other constructs (Fornell & Larcker, 1981).

### **3.8.1. Manipulation check**

The researcher ensured that the subjects of survey manipulated successfully. A general question regarding whether they completely understood cyberbullying was checked. A discriminant analysis of the variable's anonymity, Instagram features, Instagram usage, peer pressure and vulnerability using subject response to the general questions as a grouping variable was carried out.

## **3.9. Data Analysis Technique**

The data analysis gotten from questionnaires was processed using quantitative methods and techniques since the research instrument is made up of quantifiable data. The data obtained

from the survey was extracted from Qualtrics and exported into Excel. Furthermore, to make sure that the data was error-free, a data cleaning process was carried out in which every row and column that consisted of empty data or uniform data all through was removed. After which the data cleaning was carried out to a satisfactory level, the indicators were named and positioned in the first row of the spreadsheet. This was done to enable the statistical software (Smart PLS) to import data accurately. The Smart PLS could not read native Excel file formats directly, hence the format had to be changed from the.xml to the.csv format.

After the data was converted and exported successfully, the prepared data was then captured and analysed using smart PLS, a Partial Least Square Structural Equation Modelling (PLS-SEM) software package (Ringle et al., 2005). The researcher used SmartPLS for the analysis of this research because it is widely used statistical software, easily accessible, and the researcher understands how SmartPLS works. The partial least square technique of structural equation modelling makes use of principle component-based for estimation. The first step of the PLS-SEM model is to examine the measurement models and draw from a different set of metrics dependent on the model type. The second phase involves examining the structural model and paying attention to the significance and relevance of the path coefficient and the model's explanatory power ( $R^2$ ) and its predictive power (using PLS predict). When using PLS-SEM models for reflective models, the researcher should check the indicators of construct reliability, convergent reliability, and discriminant validity (Sarstedt & Cheah, 2019).

This approach is appropriate for validating predictive models, particularly those with small samples (Chin, 1998). Also, an added advantage to this approach is that, using PLS-SEM, the measurement and the structural model can be analysed at once (Hair et al., 2013), and it also has fewer stringent requirements regarding distribution properties (Wold, Martens & Wold, 1983). Another motivation for using the PLS-SEM model was due to the aims of this research, which was to explain the variance of the endogenous construct "cyberbullying behaviours." Smart PLS generates t-statistics for significant testing of both the inner and outer models using a procedure called bootstrapping (Wong, 2013).

### 3.10. Timeframe

The time frame for a research project, can be either longitudinal or cross-sectional. "For a cross-sectional study, it assesses a sample at a point in time that does not exceed months. A longitudinal study involves collecting data over a long period of time (mostly years) to study a

phenomenon” (Sekaran, 2003; Bougie & Sekaran, 2019 p.112). For this research, the timeframe used was cross-section as it focused on gaining understanding from a present occurrence (Saunders et al., 2009). Basically, the study analysed the factors influencing cyberbullying over a specific time span of less than one year, with the time spent collecting data having no effect on the changes in the data collected. This was appropriate for this due to the time constraints involved in a master’s study and the survey method applied for this study (Saunders et al., 2007).

### 3.11. Ethics and Confidentiality

Pertaining to this study, ethics is described as the aptness of the researcher’s conduct in context to the safety and rights of the respondents who either partook in the work of the researcher or are impacted by it (Saunders, 2007). It is required that researchers be fully informed of and adhere to the research committee agreements. These agreements define which behaviors are acceptable and unacceptable in the conduct of professional research (Bhattacharjee, 2012). The researcher should never alter any of the following: data gathering, analysis, and explanation of procedures in a method that counters research guidelines or expresses the private agendas of the researcher. Blatant disrespect of research protocols and conduct can result in reprimanding, professional dishonor, and/or legal consequences.

In carrying out any research, reliability and safety of the subject should be of the utmost priority (Neuman, 1994; Bhattacharjee, 2012). Hence, the researcher made sure that prior to distributing the instrument, it was first submitted to the ethics committee of the University of Cape Town for review alongside an application and request form to carry out this research. (See appendix A for the approval). The researcher also ensured that other research procedures for conducting research were properly adhered to and potential ethical concerns were identified. An in-depth cover letter that consisted of a summary of the research, the purpose of the research, and a written consent form for the participants was attached to every questionnaire served. (Consent form attached to Appendix B). The supervisor of the researcher also appended his signature to the letter. The researcher made sure to inform the participants of their right and free will to participate voluntarily in the survey. Also, the respondents were fully aware that their answers would be addressed with full concealment. And even though the identity and demographic information was not disclosed for this study, the original data was still treated

with the utmost discretion, was in the sole custody of the researcher, and gotten rid of when this study comes to an end.

### 3.12. Summary

The objective of this research is to identify the factors influencing cyberbullying among the age cohorts (18–30). Considering this, the chapter provided a detailed summary of the study's research design and methodology. Furthermore, it also proceeded to explain comprehensively the philosophical underpinnings of research that led to the choice of the research paradigms, methods, approaches, and techniques adopted for this study. For this research, a positivistic paradigm, a survey strategy, explanatory research, and the use of quantitative methods for data collection and analysis were adopted. The research instruments involved closed-ended questions.

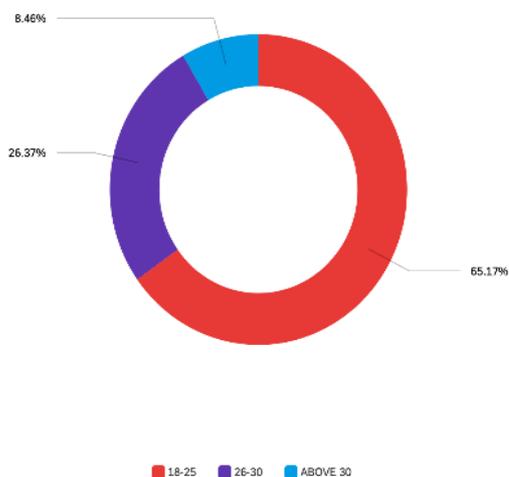
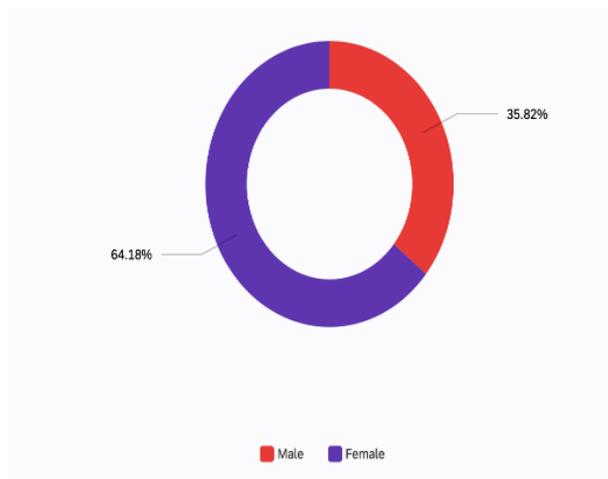
## CHAPTER 4.

### 4.1 Data Analysis

This chapter illustrates the analytical methods and techniques used in this study, as well as a discussion of the findings. A description of the instrument validity and reliability tests is included in the discussion. The results are presented in the form of models and tables after the analysis and description. This chapter concludes with a discussion of the findings.

### 4.2 Demographics

The sample collected consists of 215 respondents. Part of the responses were deleted because some respondents did not complete the survey. The total number of respondents used for this research was 201 (N = 201), which was used for further analysis of the study. The target population of this study was solely university students who own one or more Instagram accounts. Respondents were asked to indicate their age, gender, and level. The information gotten from these demographic categories is illustrated by the pie chart below.



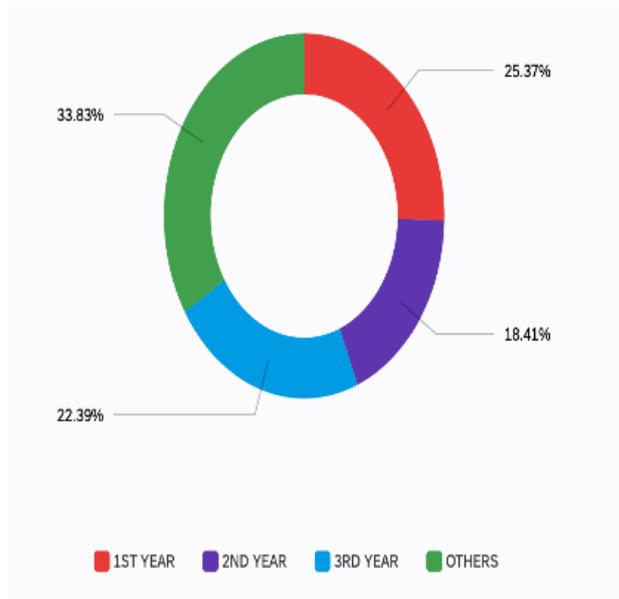


Figure 4: Respondent Demographics

Majority of the 201 respondents were females (129) with a percentage of 64.18%, followed by males (72) with a percentage of 35.82%. In the age category, greater number of the 201 respondents were in between the age range of 18-25 at 65.17% with a count of (131) and the age range 25-30 coming next at 26.37% with a count of (53) while the age range 30 and above had a count of (17) at 8.45%. And finally in the level category, there was a preponderance of other students which comprises of masters, PhD, and honors student at 33.83% with a count of (68) followed by 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> year, students with a count of (51) at 25.37%, (45) at 18.41%, and (37) at 22.39% respectively.

The result further showed that 94.03% (189) admitted to owing an Instagram account while 5.97% (12) indicated that they do not currently own an Instagram account. The information gotten from the demographics is further presented in the table 5 below

Demographics	Category	Frequency	Percentage
Gender	• Male	72	35.82
	• Female	129	64.18
Age	18- 25	131	65.17
	26-30	53	26.37
	Above 30	17	8.45

1 <sup>st</sup> year student	level	51	25.37
2 <sup>nd</sup> year student		45	18.41
3 <sup>rd</sup> year student		37	22.39
PHD & Honours		68	33.83
Instagram account	Yes	189	93.03
	NO	12	5.97

Table 5: Respondents Demographics

### 4.3 Analysis Measurement Model

The dependability of a model's indicators must be carefully examined due to their high correlation. If the indicators of a model are significantly correlated and interchangeable, the model is reflective (Hair et al., 2013). (Haenlein & Kaplan, 2004; Hair et al., 2013). The model for this analysis was developed as a reflective measurement model.

#### 4.3.1 Factor Analysis (SEM-PLS Analysis)

##### Model of the Research Study

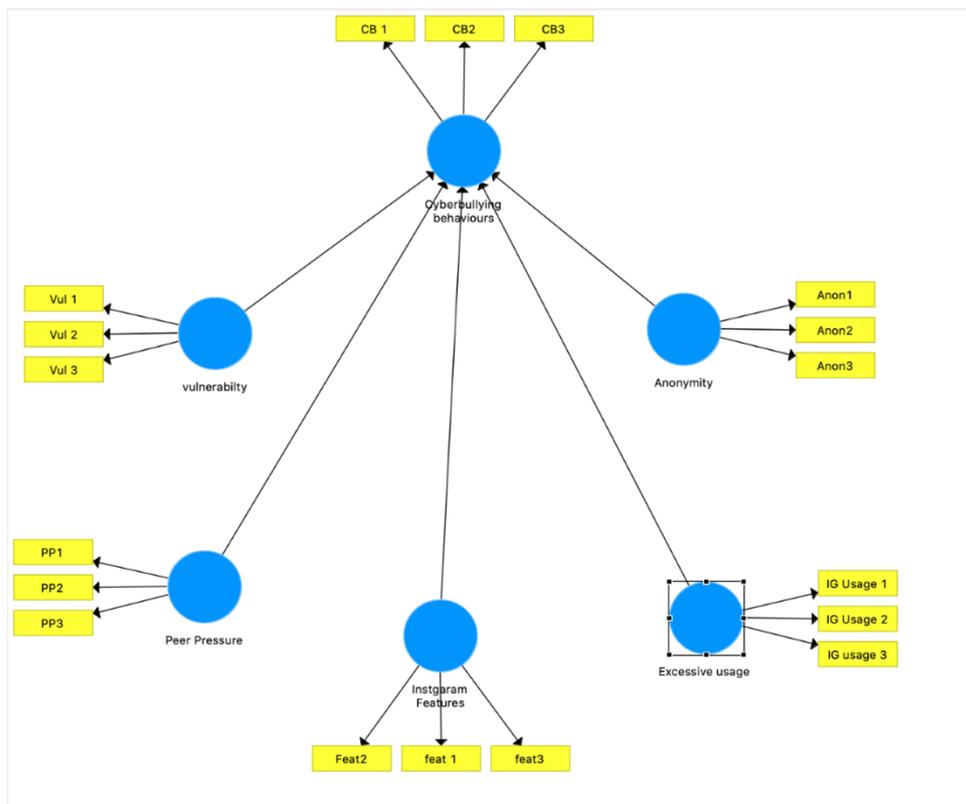


Figure 5: model of research study

The above figure shows the initial causal model used to answer the research questions of this thesis. The researcher set up the model above to find out the extent to which Vulnerability (Vul), Peer Pressure (PP), Instagram Features (Feat), Excessive Instagram usage (IG Usage) And Anonymity (Anon) influences Cyberbullying behaviours of Instagram. Vul, PP, Feat, IG Usage, and Anon are the different factors of models which comprises of various indicators.

The Anonymity Comprises of 3 indicators namely:

1. Anon 1: Do you agree with the statement that people take advantage of anonymity to perpetuate cyberbullying behaviour?
2. Anon 2: I have been bullied on Instagram via an unidentified or fake account.
3. Anon 3: I have a separate Instagram account that I use whenever you want to conceal your identity i.e., Ghost/ false account.

The Instagram Feature Comprises of 3 indicators namely:

1. Feat 1: The privacy setting on Instagram helps reduces cyberbullying.
2. Feat 2: Bullying occurs mostly in the comment section.
3. Feat 3: Bullying on Instagram occurs mostly via direct messaging?

The Instagram Usage comprises of 3 indicators namely:

1. IG Usage 1: Do you agree with the statement that excessive use of Instagram can reduce self-esteem?
2. IG Usage 2: Excessive Instagram usage can spontaneously and unintentionally lead you to practice self- comparison
3. IG Usage 3: I compare myself a lot when viewing contents and post Instagram

The Peer pressure comprises of 3 indicators namely:

1. PP1: I have felt pressured to modify my Instagram pictures to follow trends that can boost my online reputation and gain for followers.
2. PP2: I have felt pressured to go above my means to create content that please my followers for more likes, followers, and views
3. PP3: Do you agree with the statement that Instagram serves as a toxic mirror through which people can view themselves and emulate lifestyles that can sometimes be toxic or harmful

The vulnerability comprises of 3 indicators namely:

1. Vul 1: Users who are less experienced are most likely to be harassed online
2. Vul 2: linking your Instagram account with other social media account increases vulnerability
3. Vul3: User’s age has an influence on vulnerability

The cyberbullying behaviour Comprises of 3 Indicators namely:

4. CB 1: I have bullied or been bullied by someone on Instagram due to one of the following reasons (Peer pressure; I took advantage /someone took advantage of (my) vulnerability, I felt invisible online, excessive usage)
5. CB 2: I experienced cyberbullying more on Instagram compared to other social media
6. CB 3: I have been harassed, received threats and insults via Instagram

#### 4.32 Outer Model Evaluation

The evaluation of the outer model is the first stage of the PLS-SEM analysis. The primary purpose of this evaluation is to determine how effectively each question relates to each component. The two types of indicators (questions) in PLS-SEM are reflecting and formative, respectively. The indicator reliability, internal consistency, construct validity, and discriminant validity must all be examined when evaluating a reflective model (Hair et al., 2013).

	Anonymity	Cyberbullying behaviours	Instagram usage	Instagram features	Vulnerability	peer pressure
Anonymity 1	0.904					
Anonymity 2	0.863					
Anonymity 3	0.831					
Cyberbullying behaviours 1		0.722				
Cyberbullying behaviours 2		0.861				
Cyberbullying behaviours 3		0.735				
Instagram features 2				0.691		

Instagram Usage 1			0.822			
Instagram Usage 2			0.694			
Instagram Usage 3			0.871			
Peer pressure 1						0.893
Peer pressure 2						0.888
Peer pressure 3						0.542
Vulnerability 1					0.808	
Vulnerability 2					0.785	
Vulnerability 3					0.726	
Instagram features 1				0.738		
Instagram features 3				0.704		

Table 6: Outer Loadings of Evaluation model.

From the above illustration, each factor of the model can be referred to as a variable which consists of items known as the indicators. The reliability of the items of all the variable has been assessed through cross loadings. A few of the items had a factor loading of less than 0.7 on their construct as displayed above. Therefore, the researcher deleted the following items in the constructs to increase the reliability of the model:

- Instagram feature: Feat 2
- Instagram Usage: Instagram Usage 2
- Peer pressure: PP 3

Following that, the cross-loading was verified again, and the factor loading values were within or higher than the threshold value of 0.7. To summarize, each item is significantly reliable and accurately assigned to the specific latent construct, as seen in the diagram below. Due to the shared variation between the indicators and the variables, there is also convergent validity. It was also observed that the factor loading was significant at the 5% level of significance.

	Anonymity	Cyber bullying behaviours	Instagram features	Instagram usage	Peer Pressure	Vulnerability
Anonymity 1	0.904					
Anonymity 2	0.864					
Anonymity 3	0.830					
cyberbullying behaviour 1		0.731				

cyberbullying behaviour 2		0.856				
cyberbullying behaviour 3		0.733				
Instagram Usage 1				0.894		
Instagram usage 3				0.915		
Peer Pressure 1					0.909	
Peer Pressure 2					0.906	
Vulnerability 1						0.808
Vulnerability 2						0.785
Vulnerability 3						0.726
Instagram features 3			0.770			
Instagram features 2			0.821			

Table 7: New outer loadings of Evaluation model.

A new modified model was used for further analysis. Illustrated by the figure 6 below.

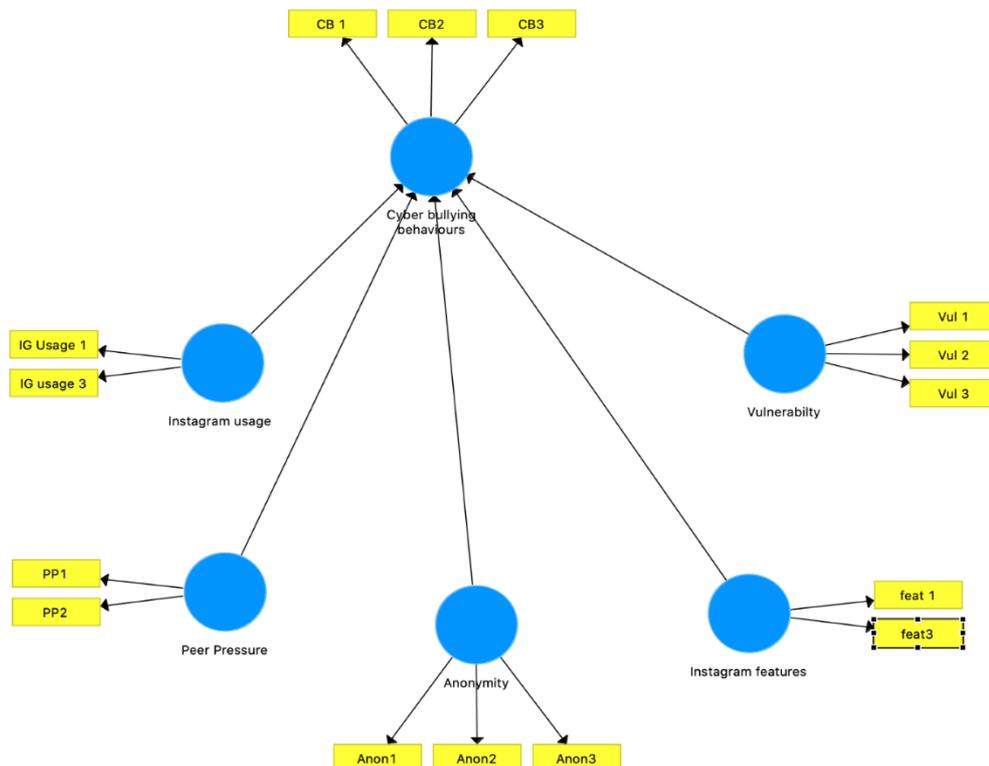


Figure 6: New research model

4.33 Explanation of target endogenous variable variance

After the modification of the model accordingly, the Consistent PLS (PLSc) Algorithm was calculated. PLS algorithm executes a correction of the correlations of reflective constructs to produce results that are in consistency with a factor model (Sarstedt, Ringle, Smith, Reams & Hair, 2014). The numbers in the circle refer to the extent to which the variance of a certain latent variable is influenced by other latent variables.

The results of the PLSc algorithm are demonstrated by Figure 6. The value 0.565 represents the coefficient of determination  $R^2$  for the cyberbullying behaviour endogenous latent variable. This simply means 56.5% of the variance of the cyberbullying behaviour construct is explained by the latent variable namely: Anonymity, peer pressure, Instagram usage, Vulnerability, and Instagram Features. Hence It can be concluded that IG Usage, PP, Anon, Feat, and Vul put together influences cyberbullying behaviour to some extent.

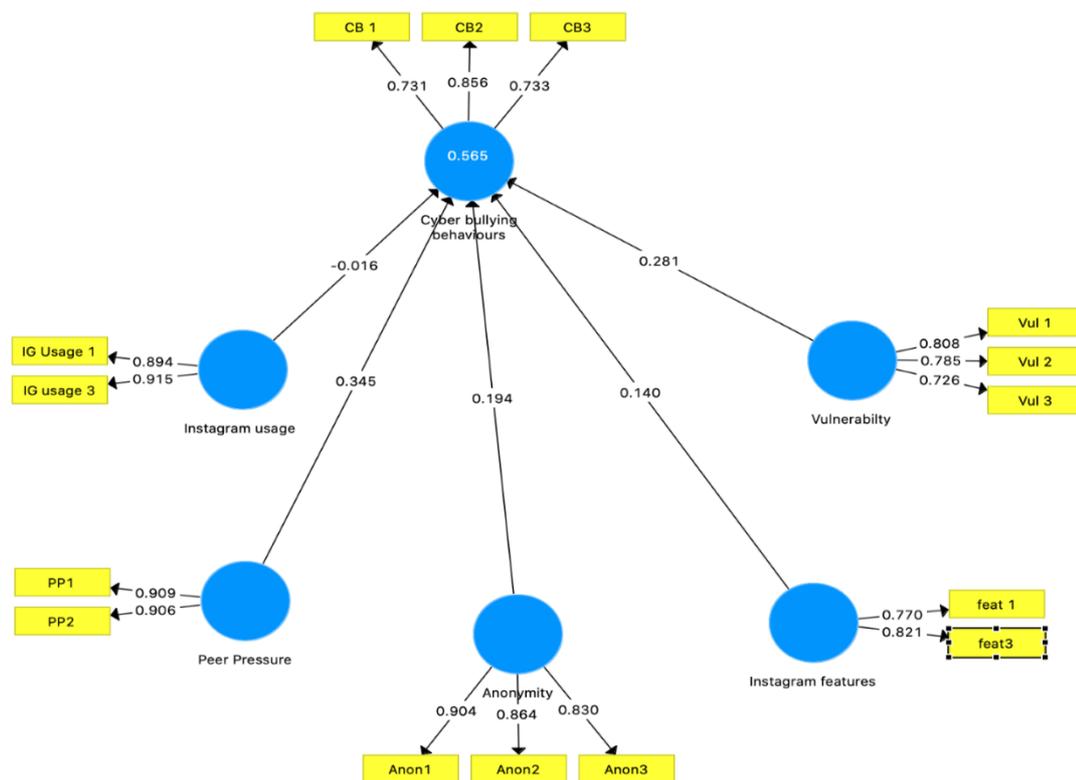


Figure 7: Consistent PLS Algorithm Results

**4.3.4 Inner model path coefficient sizes and significance**

Using Smart PLS, the researcher interpreted the path coefficient of the inner model. Path coefficient computes the strength of the relationships between the independent and the dependent variables. From the weight of each path coefficient allows the researcher to rank their relative statistical importance. The PLS path modelling estimation for the research is shown in table 5 below.

Variable	Path Coefficient
Instagram usage	-0.016
Peer Pressure	0.345
Anonymity	0.194
Instagram Features	0.140
Vulnerability	0.281

*Table 8: Path coefficient*

A path coefficient that is lower than 0.1 is statistically insignificant (Wong, 2013). By examining the result of the values of path coefficient of IG Usage, PP, Anon, IG feat, and Vul relating to cyberbullying behaviours, the following observations can be made from the table 5 above. The result suggests that peer pressure has the highest influence on cyber bullying behaviours with a path coefficient of (0.345) followed by Vulnerability with a path coefficient of (0.281). Therefore, it is notable that the hypothesized path relationship between peer pressure and cyberbullying behaviour is statistically significant. Further analysis shows that anonymity and Instagram features predicts cyberbullying behaviours to a small extent with a low path coefficient of (0.194) and (0.140) respectively. While cyberbullying behaviours and Instagram usage have an exceptionally low path coefficient of (-0.016). Subsequently, at this point Instagram usage is not considered to be a strong predictor of cyberbullying behaviours.

**VALIDITY TEST**

Validity primarily means “measure what is intended to be measured” (Field, 2005). In the case, the researcher is aiming to test the degree to which the questionnaire used for this study measured what it is supposed to measure using construct validity. Construct validity points out how well the researcher transformed a behaviour that is a construct into functioning reality. Construct validity consists of two components namely: convergent and discriminant validity (Taherdoost,2016).

**4.3.5 Convergent validity**

The convergent validity guideline is commonly used in sociology, psychology, and other behavioural sciences. It is the degree to which two measures on construct that theoretically should be related, are actually related (Taherdoost,2016).

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Anonymity	0.834	0.837	0.900	0.751
Cyber bullying behaviours	0.669	0.696	0.818	0.602
Instagram features	0.421	0.424	0.775	0.633
Instagram usage	0.779	0.785	0.900	0.818
Peer Pressure	0.786	0.786	0.903	0.824
Vulnerability	0.664	0.667	0.817	0.599

*Table 9: Construct Reliability and Validity*

The composite reliability (CR) and the average variance extracted (AVE) should be considered when attempting to test for convergent validity. For a model to be satisfactory for convergent validity, an AVE of at least 0.50 is highly recommended (Alarcón, Sánchez & De Olavide,2015). In the table 6 above, the result displayed shows that all the AVE values are within the threshold of 0.50. Similarly, the CR values of all the items are relatively high ranging from 0.7 to 0.9. Conclusively, all the indicators are suitable for convergent validity.

**4.3.6 Internal Consistency Reliability**

When it comes to assessing study effects and test results, reliability is fundamental. The degree to which items on a test jointly measure the same construct is referred to as internal consistency. Reliability is concerned with score consistency and is especially relevant when our assessments have significant consequences. (Henson, 2001). The Cronbach alpha test was used to establish the internal consistency of each variable; this is to determine the variable's reliability and consistency (Bahattacherjee, 2012). The exploratory standard for instrument development was increased to .70 in the second edition of Nunnally's (1978) classic work, which led to much research citing Nunnally (1978) (Henson, 2001). However, in the case of exploratory studies,

a threshold of 0.60 can be considered (Fornell & Larcker, 1981; Hair et al., 2006). The table below shows the result of Cronbach's alpha test conducted on each construct.

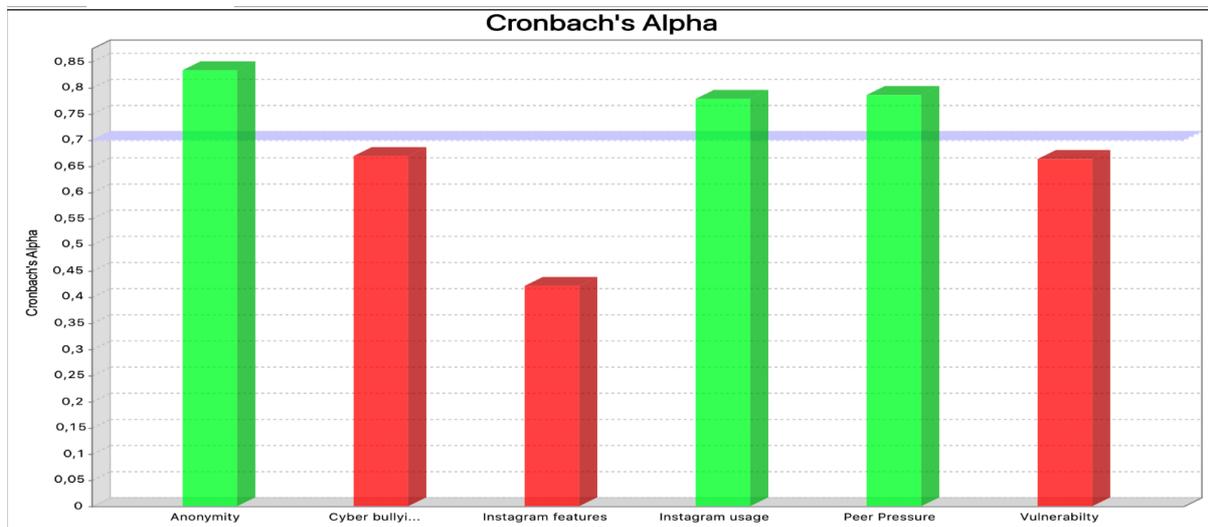


Figure 8: Cronbach Alpha value Per Construct

As mentioned above, Cronbach Alpha should range between 0.9 and 0.7 to be regarded as reliable (Tavakol & Dennick, 2011). However, a study on Reliability and validity of the PAS-ADD checklist for detecting psychiatric disorder in adults with intellectual disability deemed Alpha's over 0.6 acceptable (Moss et al; 1998).

The result from the table above indicates that all the constructs except Instagram Features have a reliability of 0.6 and above. This clearly shows that 0.4 Cronbach alpha reliability results for Instagram- Features is low. According to Tavakol & Dennick (2011), a low alpha value could be attributed to a small number of questions, weak item inter-relatedness, or heterogeneous constructs. When evaluating unobservable characteristics like motivation and depression, behavioural scientists claim that Cronbach's alpha makes various unreasonable assumptions (Sijtsma & Pfadt, 2021). As a result, research has suggested that composite reliability be used instead (Bagozzi & Yi, 1988; Wong, 2013; Hair et al., 2012). Similar to Cronbach's alpha, composite reliability is a measure of internal consistency in the scale item (Netemeyer, 2003). It can be calculated as the whole amount of real score variance relative to the total scale score variance (Brunner & Süß, 2005). The researcher employed composite reliability to assess the reflective model's internal consistency and to estimate the variable's reliability (Henseler et al., 2009; Hair et al., 2011). Scores of 0.7 or above are considered satisfactory for composite reliability (Fornell & Larker, 1981; Gefen & Straub, 2005). The dependability of each scale was determined using the PLS output's composite reliability scores. As shown in Table 6, the

Instagram feature variable's composite reliability score was within the range of 0.7. As a result, all the variables have a high level of internal consistency.

**4.3.7 Discriminant Validity**

This is the degree to which latent variable A distinguishes itself from other variables (such as B, C, and D). Simply put, a latent variable can explain for greater variance in the observable variables associated with it than a measurement error, equivalent unmeasured external influences or another construct within the framework. If this isn't the case, the individual indicators' and the construct's validity are questionable. If (1) item-to-variable correlations are higher than other variable measurements and composite values, and (2) the square root of each variable's AVE is bigger than other correlations among latent variables, discriminant validity can be proven (Gefen & Straub, 2005).

The Fornell-Lacker criterion was employed to verify its discriminant validity. This is a more appropriate method to cross loadings, and it was chosen because all of the variables are reflective (Hair et al., 2014). Discriminant validity, according to Fornell and Lacker (1981), is established when a latent variable explains more variance in its associated indicator variables than it shares with other constructs in the same model. Each construct's AVE must be compared to its squared correlations with other constructs in the model to meet this criterion (Gefen & Straub, 2005).

The researcher used Fornell and Larcker criterion and Hetarotrait-Monotrait (HTMT) ratio of correlation for this thesis.

	Anonymity	Cyber bullying behaviours	Instagram features	Instagram usage	Peer Pressure	Vulnerability
Anonymity	0.867					
Cyberbullying behaviours	0.559	0.776				
Instagram features	0.399	0.464	0.796			
Instagram usage	0.248	0.277	0.238	0.905		
Peer Pressure	0.502	0.644	0.387	0.342	0.908	
Vulnerability	0.497	0.618	0.415	0.331	0.545	0.774

*Table 10: Fornell-Lacker Criterion*

The result of the discriminant validity shows that the model meets the Fornell-Lacker criterion. The CR values are above 0.7 and the AVE is within 0.599 and 0.824

Heterotrait-Monotrait Ratio

The other method the researcher used in determining validity for this thesis is the Heterotrait-monotrait (HTMT) ratio of correlation. According to Hamid, Sami & Sidek (2017), the Fornell-Lacker criterion and the evaluation of cross loadings are deficiently sensitive to ascertain validity when compared with HTMT criterion. Research shows that HTMT method is a more effectual method of discriminant validity. The postulation about heterotrait-monotrait is that the closer the value is to one the lower the discriminant validity. In addition, HTMT has a higher specificity and sensitivity rates which varies from 97% to 99% in comparison to Fornell-Lacker criterion that has a rate of only 20.82% (Henseler et al., 2013). HTMT entails differentiating it to a predefined threshold after which it can be concluded that there is lack of discriminant validity if the value of the value of the HTMT is higher than this threshold. In order to improve credibility of the findings, researchers have expressed a threshold of 0.85 (Clark & Watson, 1995; Kline, 2011), but according Henseler et al., (2015); Voorhees et al., (2016), they recommended that the threshold value of 0.85 which was posited as the conservative benchmark be reviewed to a more liberal cut-off value of 0.9 or higher. They further stated that the choice of threshold level should be made based on background of how critical or conservative the researcher wants to be in testing for discriminant validity and how confident (S)he is about the uniqueness of the constructs (Henseler et al., 2015; Franke & Starstedt 2019).

	Anonymity	Cyber bullying behaviours	Instagram features	Instagram usage	Peer Pressure	vulnerability
Anonymity						
Cyber bullying behaviours	0.721					
Instagram features	0.665	0.872				
Instagram usage	0.308	0.382	0.420			
Peer Pressure	0.622	0.869	0.665	0.431		
vulnerability	0.660	0.926	0.778	0.462	0.754	

Table 11: Heterotrait-Monotrait Ratio

Pertaining to the above result displayed in table 11; in the HTMT<sub>.90</sub> criterion, there is one violation which is between vulnerability and cyberbullying behaviours. In this case the HTMT value is above the critical value of 0.9. Thus, discriminant validity is established for all except one hence the researcher decided to run a bootstrapping routine to test whether the HTMT is significantly different from one. which is also known as HTMT inference.

#### 4.3.8 PLS Bootstrapping Results – Path Coefficients for Inner Model

To further increase the credibility of the findings, gotten from evaluating the consistent PLS Algorithm, a PLS bootstrapping was used to test the model. Bootstrapping is a process carried out by smart PLS to carry out T-statistics for significance testing of both the structural path and its associated hypothesis. As approved by (Henseler et al., 2009), many samples (5000) were derived from an original sample with replacement to produce bootstrap standard errors, which then gave an approximate T-value for significant testing of the structural path.

The bootstrapping results helped to approximate the normality of the data (Wong, 2013). The analysis gives an approximate of the explained variance in the construct which is adequate for assessing significance (Hair et al., 2014). After the researcher ran the bootstrapping, T-statistics was perceived to check if the path coefficient of the inner model were significant or not. For the purpose of this study, a two tailed test with a significant level of 5 percent (Levin et al., 1985) the path coefficient will be significant if the t-statistics is larger than 1.96.

To proceed with the test, a null hypothesis and alternative hypothesis will be defined. A null hypothesis expresses that there are zero statistical significance between two variables while the alternative expresses otherwise (Frick,1995). The null and alternative hypothesis have been defined for the each of the construct as follows.

1. Online vulnerability:

H<sub>0</sub>: Online vulnerability do not influence cyberbullying behaviour in young adults

H<sub>1</sub>: Online vulnerability influences cyberbullying behaviour in young adults

2. Peer pressure

H<sub>0</sub>: Peer Pressure do not influence cyberbullying behaviours in young adult

H<sub>1</sub>: Peer Pressure influences cyberbullying behaviour in young adults

3. Anonymity

H<sub>0</sub>: Anonymity do not influence cyberbullying behaviours in young adults

H<sub>1</sub>: Anonymity influences cyberbullying behaviours in young adults

4. Instagram features

H<sub>0</sub>: Instagram features do not influence cyberbullying behaviours in young adults

H<sub>1</sub>: Instagram features influences cyberbullying behaviours in young adults

5. Excessive use of Instagram

H<sub>0</sub>: Excessive use of Instagram do not influence cyberbullying behaviours in young adults

H<sub>1</sub>: Excessive use of Instagram do not influence cyberbullying behaviours in young adults

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
Anonymity -> Cyber bullying behaviours	0.194	0.191	0.066	2.944	0.003
Instagram features -> Cyber bullying behaviours	0.140	0.142	0.055	2.525	0.012
Instagram usage -> Cyber bullying behaviours	-0.016	-0.015	0.056	0.282	0.778
Peer Pressure -> Cyber bullying behaviours	0.345	0.346	0.072	4.776	0.000
vulnerability -> Cyber bullying behaviours	0.281	0.286	0.070	4.001	0.000

Table 12: Path Coefficient of Bootstrapping Results

The P- values of this study have been displayed in the table 12 above. It can be interpreted from the result that for the Anonymity, Instagram Features, Peer pressure, and vulnerability is true with a statistic level of less than 5%. Therefore, the hypothesis is accepted for these constructs with the T-statistics of 2.944, 2.525, 4.776, and 4.001 correspondingly. Basically, this indicates that there is a statistical significance between Anonymity, Instagram Features, peer pressure and Vulnerability constructs and cyberbullying behaviours at a significance level of 5%. Subsequently, the null hypothesis for Anonymity, Instagram features, peer pressure and Vulnerability are accepted, and the alternative hypothesis are rejected. On the other hand, the p-value of Instagram usage is 0.778 which is significantly higher than the threshold of 5% therefore, the null hypotheses for IG usage is rejected and the alternative hypothesis is accepted at a significance level of 5%.

4.4 Discussion

This study empirically investigated how well Routine Activity Theory (RAT) explained the influence of cyberbullying behaviours among individuals within the age cohorts of (18-30).

The constructs of Routine Activity Theory were hypothesized to influence cyberbullying behaviours. It was found the Routine Activity theory provided a coherent explanation on the factors that influence cyberbullying behaviours among young adults. As illustrated in the analysis, the determinants proposed to influence cyberbullying behaviours differed greatly.

Hypothesis	Path Coefficient	T-statistics	P-value	Supported?
H1: Anonymity-> cyberbullying behaviours	0.194	3.146	0.002	supported
H2: Instagram features->cyberbullying behaviours	0.14	2.592	0.010	Supported
H3: Instagram usage ->	-0.16	0.282	0.778	Not supported
H4: Peer pressure-> cyberbullying behaviours	0.345	0.405	0.000	supported
H5 Vulnerability->	-0.281	4.107	0.000	Supported

*Table 13: summary of result analysis*

**A. Anonymity**

In this study, anonymity implies users concealing their identities to partake in anti-social behaviors (Zhang & Kizilce, 2014). On social media platforms such as the Instagram platform, which allows users to anonymously create short posts and browse through a feed of posts from other users without revealing their identities (e.g., user ID, real name, display photo, email address). Such platforms are structured to provide users with practical anonymity. Two consequences immediately follow such a lack of identity design: (1) connections cannot be inferred between posts created by the same user; and (2) the risks of identity are kept as low as possible due to a lack of transparency or reputation.

Another feature of the aforementioned applications is that users can anonymously disclose to a specific audience, such as their social connections from other platforms (e.g., from Instagram or from their phone's address book), or to people nearby, often using the mobile phone's location-aware features, while remaining anonymous (Rogal, 2013). The influence of anonymity on cyberbullying behaviours was tested using the following hypothesis:

***H1: Instagram enables anonymity, thereby resulting in cyberbully behaviours on Instagram.***

The p-value for anonymity is 0.002; therefore, it can be concluded incisively that anonymity has a positive significance on cyberbullying behaviours. Hence, the hypothesis H1 is supported. As illustrated in the table, the observed path coefficient for anonymity in cyberbullying behaviours is 0.194. Also, ( $P < 0.5$ , T-statistics = 3.146) suggests that Instagram users make use of the anonymity enabled within the platform to cover their digital footprints to carry out cyberbullying behaviours.

This is generally consistent with previous work involving social media and cyberbullying. The reality that anonymity has a great influence on individual behaviour has long been noted by socio-psychological research (Zimbardo, 1969). Research has found that individuals in an anonymous environment have a high possibility of becoming aggressive and violent (Katzner, 2016). A lot of research has also examined how the state of anonymity influences online behaviour (Bernstein et al., 2011; Postmes, Spears & Lea, 1998; Seigfried-Spellar & Lankford, 2018). Generally, they stipulated that anonymity could have either a positive or negative effect on user behaviour. Negative influence includes antisocial behaviour, while positive influence can serve as a cover for intimate people in an open discussion. In the research, anonymity was analysed in context with cyberbullying perpetrations on Instagram, and the result revealed that, to an extent, Instagram users did take advantage of the anonymous feature for malicious purposes.

## B. Instagram Features

Research into this medium is worthwhile due to the fact that Instagram has features that distinguish it from Facebook. Instagram use is also linked to a variety of psychological well-being factors. Instagram provides features such as video and photo sharing, as well as liking and commenting on other people's posts. Instagram also added the ability for users to create

live stories and share them with followers. Although an extremely limited number of studies have been published on how different Instagram features are related to problematic use, it has been demonstrated in previous studies on Facebook that excessive use of likes and wall updates on Facebook is associated with bonding social capital and that using different Facebook features (e.g., likes, shares, comments, and status updates) has different psychophysiological effects on users (Kırcaburun & Griffiths, 2019).

For this study, Instagram features are applied as the array of various options and affordances that Instagram provides to users, such as filters, commenting, direct messaging, Instagram stories, etc. The influence of Instagram features on cyberbullying behaviors was tested using the following developed hypothesis:

***H2: Instagram offers users a variety of exciting features that can enable cyberbullying behaviours.***

The p-value for Instagram features is 0.010. The result of the p-value shows that there is a positive correlation between Instagram features and cyberbullying behaviours. Therefore,

As shown in table 12, hypothesis H2 was supported. As a result, this study concludes that the influence of Instagram features on cyberbullying behaviours is significant. A path coefficient value of 0.14 was observed. ( $p < 0.5$ , T-statistics = 2.592) indicate that Instagram's features encourage cyberbullying among users.

Only a few researchers have taken Instagram's features into consideration. Most of this research revealed that Instagram features such as liking, and commenting could be problematic for some users (Kırcaburun & Griffiths, 2019). This research examined how effective the privacy setting was on Instagram by asking the respondents if they agreed that the privacy setting helped reduce cyberbullying on Instagram. Similar to the comment section, direct messaging was also taken into consideration as a feature that could potentially influence cyberbullying behaviours on Instagram and was examined in this research. The result also showed that, to an extent, Instagram features have an influence on cyberbullying behaviours.

### C. Instagram Usage

According to Sherlock & Wagstaff (2018); their journal article on exploring relationship between Instagram use and psychological well-being in women posited that frequent Instagram

use, and maybe even a higher number of followers and users followed, is positively associated with the severity of depression and anxiety symptoms.

Instagram usage implies that an excessive amount of time spent on Instagram can lead to a host of psychological behaviors thereby influencing cyberbullying behaviors. The influence of Instagram Usage on cyberbullying behaviors was tested using the following developed hypothesis:

***H3: Excessive Instagram usage can lead to a host of psychological behaviours and as a result influence cyberbullying behaviours on Instagram.***

According to the aforementioned hypothesis, we envisage that excessive Instagram use to correlate positively with a host of psychological behaviour that can result in cyberbullying behaviours. previous findings in line with this research have indicated that psychological characteristics are associated with more frequent Instagram use (Vannucci et al., 2017; Sherlock & Wagstaff 2017). However, contrary to these findings from previous research, the hypothesis did not support the findings. Instagram usage had a p-value of 0.778 thereby indicating that H3 was not supported. As a result, the study concludes that Instagram usage did not have a positive influence on cyberbullying behaviors. A path-coefficient of -0.016 was observed. Implying that the influence of Instagram usage on cyberbullying behaviors is significantly low. Furthermore, ( $P > 0.5$ , T- statistics = 0.282) supports that Instagram usage does not have a significant influence on cyberbullying behaviors.

It was interesting to note that in line with this research model, excessive usage of Instagram did not have a positive influence on cyberbullying behaviours. however, this finding agrees with Paramboukis, Skues, & Wise (2016), In the research they conducted, it appeared that there was an extremely weak evidence between narcissism and Instagram usage. They further suggested that concerns relating to social media usage are somewhat exaggerated. Contradicting to the findings of this research, other researchers found problematic social media use positively linked with a host of psychological disorders and cyberbullying perpetrations. (Kircaburun & Griffiths, 2019; Martinez-Pecino, & Garcia-Gavilán, 2019). However, they also stated that the association between them was relatively weak. In conclusion, the findings implies that the rate of Instagram usage does not influence cyberbullying behaviors on Instagram

#### D. Peer pressure

Riesmeyer et al., (2021) posit that Instagram use clearly has positive implication for adolescents. i.e., identity formation, community building, and creativity in various ways. However, the platform also poses risks. Swist et al. (2015) demonstrated how these new technologies contribute to poorer mental health outcomes. When asked about the disadvantages of SNS, 11- to 16-year-olds responded with "cyberbullying," "seeing stuff you don't want to see, like porn," "making you feel envious of others," "strangers," and "it puts you under pressure to make your life out to be amazing". What becomes clear is the risk of encountering "unrealistic and potentially harmful content and practices" (Swist et al. 2015, 68), which have been linked to lower self-efficacy, happiness, and life satisfaction, as well as increased depression and loneliness

The peer pressure hypothesis implies that Instagram possesses features that can contribute to the feeling of self-doubt and inadequacy which will lead to physiological issues resulting in cyberbullying behaviors. The influence of how people perceive peer pressure on cyberbullying behaviors was tested using the following developed hypothesis.

***H4: Instagram possesses features that can contribute to the feeling of self-doubt and inadequacy which will lead to psychological issues resulting in cyberbullying behaviors.***

The p-value for peer pressure is 0.000 implying that there is a positively strong correlation between peer pressure and cyberbullying behaviors. Hypothesis H4 is therefore supported.

The observed path coefficient for peer pressure on cyberbullying behaviors is 0.345.

(P-value < 0.5, T-statistics = 0.405). Not only did peer pressure significantly influence cyberbullying behaviours, but it was also the most powerful indicator of cyberbullying behaviour. This is also in line with other research that investigated peer pressure on social media and adolescents (Anderson & Jiang, 2018; O’Keeffe, Clarke-Pearson & Council on Communications and Media, 2011). Particularly, research on “Adolescents, their perception of and coping with peer pressure on Instagram.

The findings reveal that teenagers' peer groups have both good and negative consequences. Positive in that they serve as a valuable resource for teens, an impact that is heightened by Instagram, which enables for direct contacts with peers. Then there's the negative aspect, in which teenagers, among other things, feel obligated to engage with the group and adhere to its aesthetic norms on Instagram in order to avoid being ostracized or somehow sanctioned.

Furthermore, studies also investigated peer pressure on adolescents and how its influences social media users (Chua and Chang 2016; Geber and Hefner 2019; Geber et al. 2019).

The influence in these studies were described on Instagram as pressure that can lead to stress as a result of fear missing out (Przybylski et al. 2013) communication desires (e.g., Mascheroni and Vincent 2016) and the itch to conform with others (Baumgartner, Valkenburg, and Peter 2011). The result of this studies also revealed similar trends hence the peer pressure was effective. Overall, the result showed that peer pressure plays an important and direct role in online cyberbullying behaviours.

#### E. vulnerability

Vulnerability implies a lack of knowledge regarding private settings, Instagram policies, and the vulnerability of a user's information on Instagram, which can enable cyberbullying behaviours. The Internet is vast and complex; once you disclose your information, your location may be determined in seconds. Personal information is extremely valuable. Unfortunately, many users are unaware, or if they are informed, they are unclear about how to protect their information. People love interacting and making new acquaintances without giving any attention to who may be stealing and using their information. As a result, fraud and cybercrime on users' information have been reported several times and are on the rise. The issues may not be resolved since they are multidimensional rather than one-sided. Many individuals are interested in gathering people's information, either legally or illegally, for their own advantage, and social media is one of the main areas where they may do so (Talib et al., 2014). The influence of online vulnerability on cyberbullying behaviours was tested using the following developed hypothesis:

***H5: lack of knowledge regarding private settings, Instagram policies, and the vulnerability of users' information on Instagram can enable cyberbullying behaviours.***

The p-value for vulnerability is 0.000, Hypothesis H5 was therefore supported. The observed path coefficient for the online vulnerability to cyberbullying behaviours is 0.281. Online vulnerability was the second most powerful indicator of cyberbullying behaviour. The results imply that a user's lack of knowledge regarding Instagram's private setting Instagram's policies and the vulnerability of user's information on Instagram can enable cyberbullying behaviours. ( $P < 0.5$ , T- statistics=4.107) further indicates that online vulnerability significantly influenced cyberbullying behaviours.

Similarly, studies also show that a lot of social network users do not read to understand private policies and do not realize that there might be other users who are connected to the bits of information that they post online. And this information can sometimes be used to identify identities, hence used to commit a host of cyber-related crimes such as cyber fraud, cyberbullying, cyberstalking, etc. (Toffoletti et al., 2021).

#### 4.5 Summary

Anonymity, Instagram features, peer pressure and online vulnerability are the factors with supported hypothesis. Instagram usage did not support the influence of cyberbullying behaviors in this study.

The findings imply the following:

1. Instagram enhances anonymity within its platform, thereby resulting to cyberbullying behaviors among users.
2. Instagram offers users with varieties of exciting features that influence cyberbullying behaviours among users.
3. Excessive Instagram usage cannot lead to a host of psychological behaviours that results into cyberbullying behaviours on Instagram.
4. Instagram possesses features that can contribute to the feeling of self-doubt and inadequacy which can lead to psychological issues resulting in cyberbullying behaviors.
5. lack of knowledge regarding private setting, Instagram policies and the vulnerability of user's information on Instagram can enable cyberbullying behaviours.

## CHAPTER 5

### **5.1 Conclusion & Overview of the findings**

The preceding section included an illustration and a discussion of the study's findings. This is the dissertation's final chapter, and it includes a response to the research question: What are the influencing factors that aid cyberbullying behaviours on Instagram among the age cohorts of 18–29? Theoretical and practical concerns, limitations, and suggestion for future studies are also discussed. This dissertation investigated the factors that influence cyberbullying, particularly among young adults using Instagram as a case study, because Instagram is a social networking site that is widely adopted by users within their age group (Auxier & Anderson, 2021). Although studies in information systems have examined cyberbullying, there has not been an in-depth investigation into the influencing factors of cyberbullying on social media. Specifically, this research used the routine activity theory (RAT) as a theoretical lens to investigate the influences that anonymity, Instagram features, Instagram usage, peer pressure, and online vulnerability have on cyberbullying behaviours. The result showed that of all these constructs, peer pressure is the most powerful indicator of cyberbullying behaviour on Instagram, followed by online vulnerability. The dissertation's objective was reached despite the fact that not all hypotheses were supported. The findings of this dissertation highlight the importance of understanding the influencing factors of cyberbullying on social networking sites in order to develop appropriate intervention and remedies. The implications of these findings were discussed, as well as future research directions. This is one of the few studies that used routine activity theory to investigate cyberbullying behaviours in this specific context. The structural model testing results show that the research model has strong support. All other hypotheses were supported, with the exception of H3, indicating that the research model had a statistically significant impact and implications for both researchers and practitioners. The study adhered to a positivist paradigm. Survey questionnaires were used as a data collection technique. In the literature review, five factors were identified as cyberbullying influencers. A conceptual model was developed from these factors, and hypotheses were formulated to test the theoretical model. The Smart PLS 3 model was used to examine the factors influencing cyberbullying behaviours. Approaches such as structural equation modelling and partial least squares path-modelling were used to analyse quantitative data collected from 201 participants. Statistical tests were performed to evaluate the proposed conceptual model's validity, internal

consistency, convergent reliability, discriminant validity, and average variance explained, as well as construct item reliability. The coefficient of determination, path coefficient test, and model goodness of fit were all evaluated using SmartPLS 3. The model fit the data well, and all the tests were successful. The key factors influencing cyberbullying behaviours were subjected to hypothesis testing. The finding concluded that peer pressure and online vulnerability are the two most prominent factors that influence cyberbullying behaviour on social media. Peer pressure had an observed path coefficient weight of 0.345 on cyberbullying behaviours. The result concluded that the hypothesis was supported. This study found that peer pressure has a significant influence on cyberbullying behaviours, with a significant coefficient value of ( $P < 0.5$ , T-statistics = 0.405). Vulnerability had an observed path coefficient of weight of 0.281 on cyberbullying behaviours, and this was the second strongest of all the hypotheses. This result concluded that the hypothesis was supported by the significant coefficient value ( $p < 0.5$ , T-statistics = 4.107), hence the study concluded that online vulnerability significantly influences cyberbullying behaviours on social media. Overall, the findings of this research shows that the RAT theory has proven to be a viable feasible elucidation of cyberbullying risk among young adults.

## **5.2. Research Contributions**

This study's findings addressed both a research gap and a practical contribution. On the research gap, the model can be used to understand the influence of cyberbullying factors on other social medias such as Facebook, Twitter, Tik-Tok etc. The practical contribution is that researchers interested in exploring cyberbullying will have an in-depth understanding of the influencing factors that facilitate the continuation of this social problem amidst existing interventions. Hence, it aids the development and implementation of better strategies and interventions for a safer environment online.

The researcher suggests that increased awareness of the pressures of unrealistic lifestyles, conformities, and content that exist within Instagram will help fight the feeling of inadequacy and self-doubt that leads to these pressures. The researcher also suggest that users should be well, educated and informed regarding the use of privacy settings and its intended purpose. There should also be an awareness and education program on the kind of information's not to

post in an online environment. All these measures can help mitigate cyberbullying to a large extent.

### **5.3. Research Limitations**

When conducting an analysis of a social phenomenon, such as individual security behaviours, decisions must be made that limit the scope of the study. The instruments used in this study had previously been validated. The instruments were pilot tested, and reliability and validity tests were performed. As a result of statistical analyses of the data, outliers and incomplete responses were eliminated as a result. This study did, however, have limitations, which are discussed in this section.

The demographics of the respondents were measured in this study, including sex, age, and SNS experience. The sample used in this study was not representative of South African social network users as a whole; it was directed particularly toward young adults with higher education levels than the general population. The sample results show a relative sensitivity to age. As a result, the findings of this study cannot be extended to other populations, and caution should be exercised when applying these findings to other groups of people.

Biasedness, or respondents' natural inclination to fill out questionnaires in a way that makes them look decent to others, is one of the drawbacks of self-reported data (Mckenzie et al., 2002). Furthermore, security researchers have discovered that obtaining adequate or satisfactory responses from research as delicate as security behaviours is difficult (Kotulic et al., 2004). To allay these fears, it is suggested that respondents be assured that their results will be treated with the utmost confidentiality and that a web-based data collection effort be used (Whitley, 2002). In accordance with these recommendations, the data sample was gathered using online survey tools. The outcome of this study is based on those who responded to the data collection methods used. When using this method, it is likely that some aspects of those who did not respond are lost. Also, respondents who are particularly worried about the safety and security of their information may not have responded to the survey because they are less likely to disclose that information. Consequently, these research results are unlikely to encompass those who are overly concerned about security. A major disadvantage of deploying web-based data gathering efforts for data collection is that people who do not possess the technical know-how may not have attempted to complete the survey at all.

#### **5.4. Suggestion for Future Research**

Even though this research focused primarily on the influencing factors of cyberbullying, there is still need for further research in this area of cyberbullying in particular. There is a scarcity of a rigorous theoretical framework. To fully understand and come to an incisive conclusion about the factors that influence and contribute to the growth of this phenomenon, multiple frameworks, and conceptual models must be developed. This will be critical in developing a risk assessment framework that will allow concerned parties to assess the user's exposure and recommend steps that can be taken to combat the phenomenon. The researcher suggests using Goffman's conceptual framework of presentation of self.

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## Appendix A: survey approval letter



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**FACTORS INFLUENCING CYBER BULLYING ON SOCIAL MEDIA AMONG UNIVERSITY STUDENTS: THE CASE OF INSTAGRAM**

We are pleased to inform you that your ethics application has been approved. Unless otherwise specified this ethical clearance is valid until 28-Feb-2022 .

Your clearance may be renewed upon application.

Please be aware that you need to notify the Ethics Committee immediately should any aspect of your study regarding the engagement with participants as approved in this application, change. This may include aspects such as changes to the research design, questionnaires, or choice of participants.

The ongoing ethical conduct throughout the duration of the study remains the responsibility of the principal investigator.

We wish you well for your research.

**Jacques Rousseau**  
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## Appendix B: Survey Introduction letter



### Department of Information Systems

Leslie	Commerce	Building	
Engineering	Mall,	Upper	Campus
<b>OR</b>			
Private	Bag.	Rondebosch	7701

Dear UCT Student,

I am a student enrolled in the master's programme in the Department of Information Systems at the University of Cape Town. As part of the requirement for this course curriculum, I am expected to complete a research project. The research embarked by me, in this study is titled: Factors Influencing cyberbullying Among young adults: Instagram case study. This research project has been approved by the Commerce Faculty Ethics in Research Committee. The main purpose of this research is to examine cyberbullying behaviours social networking sites. The enthusiasm behind this study lies With cyberbullying as a persisting social problem, that continues to increase amidst existing interventions the question of why is it that the phenomenal behaviour continues despite current interventions arises irrespective of extant Studies having focused majorly on the various conceptualization of cyberbullying and the occurrence of the phenomenon. Your involvement in this research will be greatly appreciated.

You are invited to participate in a short online survey, focused on Cyberbullying Among University student: The case of Instagram.

Here is the link to the survey,

[https://ucpcommerce.eu.qualtrics.com/jfe/form/SV\\_1NzMV21HhB2XaPI](https://ucpcommerce.eu.qualtrics.com/jfe/form/SV_1NzMV21HhB2XaPI)

The survey is likely to take you between, 3-5mins to complete. Please help find the time to complete this survey.

Participation is voluntary and may be withdrawn at any time or refuse to answer question without any consequences. All the data will be completely confidential and fully anonymised. For any queries or

comment please contact the researcher (me) at [OLDANT002@myuct.ac.za](mailto:OLDANT002@myuct.ac.za) or prof Michael Kyobe at [Michael.kyobe@uct.ac.za](mailto:Michael.kyobe@uct.ac.za) (research supervisor).

Your participation would be greatly appreciated.

Kind regards,

## Appendix C: Questionnaire

<p><b>Cyberbullying Behaviors Among Young Adults Survey</b></p> <p>Cyberbullying behaviours refers to aggressive behaviours carried out in an online environment by an individual or group of people using information and communication technology as a form contact to reach other users (victims). Livingstone, &amp; Smith, (2014).</p> <p>This questionnaire is highly confidential and fully anonymized. Therefore, your responses will not be disclosed with anyone.</p> <p>Please also note that this questionnaire is completely voluntary, and you can decide to exit at anytime</p>
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<p><b>A. General information- Demographics</b></p>
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Gender	Female <input type="checkbox"/>	Male <input type="checkbox"/>		
Age	18-25 <input type="checkbox"/>	26-30 <input type="checkbox"/>	Above 30 <input type="checkbox"/>	
Level	1 <sup>st</sup> year <input type="checkbox"/>	2 <sup>nd</sup> year <input type="checkbox"/>	3 <sup>rd</sup> year <input type="checkbox"/>	Other <input type="checkbox"/>
Do you own an Instagram account?	Yes <input type="checkbox"/>	No <input type="checkbox"/>		

<p><b>B. Anonymity</b></p> <p>Please indicate your agreement/disagreement with the statement below (1=Strongly Disagree; 2 = Disagree; 3= Somewhat Agree; 4= Agree; 5=Strongly Agree)</p>					
Do you agree with the statement that people take advantage of anonymity in online environment to perpetuate cyberbullying behaviours?	1	2	3	4	5
I have been bullied on Instagram via an unidentified or fake account.	1	2	3	4	5
I have a separate Instagram account that I use whenever you want to conceal my identity i.e., Ghost/ false account.	1	2	3	4	5

<p><b>Instagram features</b></p> <p>Please indicate your agreement/disagreement with the statement below (1=Strongly Disagree; 2 = Disagree; 3= Somewhat Agree; 4= Agree; 5=Strongly Agree)</p>					
The privacy setting on Instagram helps reduces cyberbullying?	1	2	3	4	5
Bullying occurs mostly in the comment section?	1	2	3	4	5
Bullying on Instagram occurs mostly via direct messaging?	1	2	3	4	5

<b>Instagram Usage</b> Please indicate your agreement/disagreement with the statement below (1=Strongly Disagree; 2 = Disagree; 3= Somewhat Agree; 4= Agree; 5=Strongly Agree)					
Excessive Instagram use can reduce self-Esteem?	1	2	3	4	5
Excessive Instagram usage can spontaneously and unintentionally lead you to practice self-comparison?	1	2	3	4	5
I compare myself a lot when viewing contents and posts Instagram?	1	2	3	4	5

<b>Peer pressure</b> Please indicate your agreement/disagreement with the statement below (1=Strongly Disagree; 2 = Disagree; 3= Somewhat Agree; 4= Agree; 5=Strongly Agree)					
I have felt pressured to modify my pictures to follow trends that can boost my online reputation or gain more Instagram followers?	1	2	3	4	5
I have felt pressured from other users' content or gone above your means to go to aesthetically pleasing places just to create content and feeds for online gratification or followers?	1	2	3	4	5
Do you agree with the statement that Instagram can sometimes serves as a toxic mirror through which people view themselves and emulate lifestyles that can sometimes be harmful or toxic?	1	2	3	4	5

<b>Online vulnerability</b> Please indicate your agreement/disagreement with the statement below (1=Strongly Disagree; 2 = Disagree; 3= Somewhat Agree; 4= Agree; 5=Strongly Agree)					
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Users who are less experienced online are more likely to be harassed?	1	2	3	4	5
Linking your Instagram account with other social media account increase vulnerability?	1	2	3	4	5
Accepting requests from strangers when your account is on the privacy settings increases vulnerability?	1	2	3	4	5

<b>Cyberbullying behaviour</b>					
<b>Please indicate your agreement/disagreement with the statement below (1=Strongly Disagree; 2 = Disagree; 3= Somewhat Agree; 4= Agree; 5=Strongly Agree)</b>					
I have bullied or been bullied by someone on Instagram due to one of the following reasons (Peer pressure; I took advantage /someone took advantage of (my) vulnerability, I felt invisible online, excessive usage?	1	2	3	4	5
I experienced cyberbullying i.e., stalking, hate comment, trolling, etc. more on Instagram compared to other social media?	1	2	3	4	5
I have been harassed, received threats and insults via Instagram?	1	2	3	4	5