ASSESSMENT OF SOCIAL MEDIA USE BY UNIVERSITY STUDENTS DURING THE SUDAN CRISIS (2019-2024)

Doctoral Dissertation

OSMAN HAMED

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ASSESSMENT OF SOCIAL MEDIA USE BY UNIVERSITY STUDENTS DURING THE SUDAN CRISIS (2019-2024)

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DOCTORAL DISSERTATION

Department of Communication Design and Management

Supervisor: Prof. Dr. FİGEN ÜNAL ÇOLAK

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ÖZET

SUDAN KRİZİ SIRASINDA ÜNİVERSİTE ÖĞRENCİLERİNİN SOSYAL MEDYA KULLANIMININ ARAŞTIRILMASI (2019-2024)

OSMAN HAMED

İletişim Tasarımı ve Yönetimi Ana Bilim Dalı

Anadolu Üniversitesi, Lisansüstü Eğitim Enstitüsü, Temmuz 2024

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Kriz zamanlarında sosyal medyanın kullanımı insanlar arasında önemli ölçüde artmaktadır. Bu çalışma, kriz dönemlerinde Sudanlı üniversite öğrencilerinin sosyal medyayı kullanımını araştırmayı amaçlamaktadır. Sudanlı üniversite öğrencileri arasında sosyal medya kullanımının mevcut durumunu betimlemek amacıyla anket yöntemine dayalı nicel betimsel bir araştırma yaklaşımı kullanılmıştır. Veriler 355 Sudanlı öğrenciden olasılık dışı kolayda örnekleme tekniği kullanılarak elde edilmiştir ve son örneklem 318 geçerli yanıttan oluşmaktadır. Nicel veriler betimsel istatistiksel analiz yöntemi kullanılarak SPSS (Sürüm 21) programı ile analiz edilirken, açık uçlu soruya verilen yanıtlar tematik analiz yöntemi kullanılarak NVIVO (Sürüm 12) ile analiz edilmiştir. Bulgular, öğrencilerin kriz sırasında sosyal medyayı yoğun bir şekilde kullandığını ve benimsediğini ortaya koymaktadır. Araştırma sonuçlarında; krizle ilgili bilgilerin anında iletilmesi ve hızlı bir şekilde yayılması nedeniyle öğrenciler tarafından en çok kullanılan sosyal medya mecrasının WhatsApp olduğu, öğrencilerin çoğunun (%98) birden fazla sosyal medya hesabına sahip olduğu görülmektedir. Elde edilen bulgular, öğrencilerin sosyal medyayı kullanımında cinsiyetlerine ve yaşlarına göre önemli farklılıklar olduğunu göstermiştir. 17-21 yaş aralığındaki öğrencilerin sosyal medya kullanımında akademik ve eğlence motivasyonları diğer yaş gruplarına göre daha yüksektir. Ayrıca araştırma kapsamında erkek öğrenciler, Facebook ve X'ı kriz dönemlerinde kız öğrencilere göre daha fazla kullanmaktadır. Bulgulara göre öğrencilerin sosyal medyayı kullanma nedenleri; haber ve bilgi, iletişim ve sosyalleşme, eğlence, akademik, iş ve mesleki, teknoloji ve kişisel gelişim gibi birçok kategoriye ayrılmaktadır.

Anahtar Kelimeler: Sosyal medya, Sosyal Ağ Siteleri, Kriz, Kullanımlar ve Doyumlar, Motivasyonlar, Sudan Üniversitesi Öğrencileri

ABSTRACT

ASSESSMENT OF SOCIAL MEDIA USE BY UNIVERSITY STUDENTS DURING THE SUDAN CRISIS (2019-2024)

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The usage of social media increases significantly among people during times of crisis. This study intends to investigate the usage of social media by Sudanese university students during crises. A quantitative descriptive research approach based upon a survey method was utilized to describe the current state of using social media by Sudanese students. The data was collected from 355 Sudanese students applying a non-probability convenience sampling method, and the final sample comprised 318 valid responses. While the quantitative data was analyzed by applying SPSS (Version 21) using descriptive statistical analysis, the replies to the open-ended question were analyzed by NVIVO (Version 12) using the thematic analysis method. The findings unveiled that the students highly used and adopted social media during the crisis. WhatsApp was the most used social media site because of the instantaneous communication and rapid dissemination of information. Most of the students (98%) had multiple social media accounts. The findings demonstrated significant differences in students' social media usage based on gender and age. The academic and entertainment motivations of the students aged between (17 and 21 years) are higher than other age groups. Also, male students use X (formerly Twitter) and Facebook more than female students. Moreover, the findings found that the students' reasons for SMU can be divided into many categories such as news and information, communication and socializing, entertainment, academic, business and profession, technology, and self-development reasons.

Keywords: Social media, Social Networking Sites, Crisis, Uses and Gratifications, Motivations, Sudanese University Students

22/08/2024

ETİK İLKE VE KURALLARA UYGUNLUK BEYANNAMESİ

Bu tezin bana ait, özgün bir çalışma olduğunu; çalışmanın hazırlık, veri toplama, analiz ve bilgilerin sunumu olmak üzere tüm aşamalarında bilimsel etik ilke ve kurallara uygun davrandığımı; bu çalışma kapsamında elde edilen tüm veri ve bilgiler için kaynak gösterdiğimi ve bu kaynaklara kaynakçada yer verdiğimi; bu çalışmanın Anadolu Üniversitesi tarafından kullanılan "bilimsel intihal tespit programı"yla tarandığını ve hiçbir şekilde "intihal içermediğini" beyan ederim. Herhangi bir zamanda, çalışmamla ilgili yaptığım bu beyana aykırı bir durumun saptanması durumunda, ortaya çıkacak tüm ahlaki ve hukuki sonuçları kabul ettiğimi bildiririm.

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STATEMENT OF COMPLIANCE WITH ETHICAL PRINCIPLES AND RULES

I hereby truthfully declare that this thesis is an original work prepared by me; that I have behaved in accordance with the scientific ethical principles and rules throughout the stages of preparation, data collection, analysis and presentation of my work; that I have cited the sources of all the data and information that could be obtained within the scope of this study, and included these sources in the references section; and that this study has been scanned for plagiarism with "scientific plagiarism detection program" used by Anadolu University, and that "it does not have any plagiarism" whatsoever. I also declare that, if a case contrary to my declaration is detected in my work at any time, I hereby express my consent to all the ethical and legal consequences that are involved.

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(Signature)

Osman HAMED

(Name and Surname of the Student)

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SNSs	: Social Networking Sites
U&G	: Uses and Gratifications
U&GT	: Uses and Gratifications Theory
SMDS	: Social Media Disinformation Scale
UTAUT	: Unified Theory of Use and Acceptance of Technology
SMU	: Social Media Use
SM	: Social Media
SMS	: Short Messaging Service
GWI	: Global Web Index
ICT	: Information Communication Technologies
RSS	: Really Simple Syndication
MUD	: Multi-User Domain, or Multi-User Dimension
TAM	: Technology Acceptance Model
UTUAT	: the Unified Theory of Use and Acceptance of Technology
EFA	: Exploratory Factor Analysis
GSMA	: Global System for Mobile Communications Association
Q&A	: Question-and-Answer
BBS	: Bulletin Board System
WWW	: World Wide Web
TMC	: Transitional Military Council
FFC	: Forces for Freedom and Change
SPA	: Sudanese Professionals Association

1. INTRODUCTION

1.1. Background

The constant and rapid changes in technology have reflected obviously in different areas of our lives including the media field. Especially, with the emergence and evolution of new media, how individuals communicate with each other has changed notably. The prevalent usage of social networking sites (SNSs) reconfigured significantly how we communicate, with whom, and with what implications (Livingstone, 2014). Recently, because of the constant advance of social media (SM), the patterns of communication have shifted from being one-way or two-way to being multi-directional (Silverman et al., 2013). Also, the way how media sends messages to the target audience has altered dramatically. In the past, the communication process was a one-way process; the information moved in one direction, but now with the growth of the internet and the prevalence of new media use it has become a multidirectional and interactive process.

In this regard, Potter (2004) stated that the information blast has changed the way how we deal with messages sent from the media. Not only the information quantity but also the information's qualitative nature has changed. These effects are in-depth. Nevertheless, they have occurred in a gradual way over generations so that they are not recognizable in a day. Covington (2004) also indicated that to navigate nowadays' data-intensive media environments successfully, it is crucial to be able to find and evaluate the requisite information. Thus, to work as a critical consumer, it is highly crucial to be conscious of the different types of bias ingrained in certain communication channels and media sources. In other words, the consumers of new media need to realize how media messages are affecting them.

The literature in the field of media includes many theoretical bases about the concept of media use. Where the beginning of the first research regarding media U&G dated back to the 1940s, and it concentrated on the reasons for the public attraction to different radio programs, particularly quizzes, and soap operas, it also studied the reading of daily newspapers (Lazarsfeld and Stanton, 1944, 1949). Those studies resulted in some unanticipated findings, for example, that daylight hours radio soap operas, even though they are often rejected as mindless and superficial stories to fill time, were found also important by their "women" listeners (McQuail, 2010). They offered a source of support and advice, a good model and example of mother and housewife, or a chance for

abreaction through tears and laughter (Warner and Henry, 1948; Herzog, 1944 as cited in McQuail, 2010).

Potter (2004) argued that, with the emergence of mass media in the 20th century, the barriers to access to information were considerably decreased, especially with the prevalence of radio, television, and the computer. By the late 20th century, the issue of access to existing information stopped being a big problem. With the Internet and personal computers, people have the possibility of accessing more information than ever before. Today not only information is effortlessly available to everyone, but information has also been getting produced increasingly. Consequently, the information problem is no longer about how to access information; it has become about how to keep up with it.

Wenner (2016) stated that we live in an era of rapidly evolving technologies that are radically changing lifestyles of people. Alterations in technology need changes in two things the knowledge and skillsets of the public together. The technology and digital world are growing and changing day by day, and that in turn leads media to evolve speedily. New media gives individuals the possibility to interact with the information source immediately. In simple words, new media has created a major leap in information diffusion. Also, it makes individuals a part of the communication process, because on new media no barrier to entry, every person can establish a digital news platform, and anyone can express their opinions and thoughts unless it is against the terms of use of the media., but not everyone is reliable as a normal news source.

Andreu (2020) stated that citizens' interest is steered toward content, not toward the media. Accordingly, they use a collection of different media means to gain the information they need or seek. The accelerated advancement of the Internet, and accessibility, development, and usage of mobile phones have changed the lives of most individuals, particularly in developed states, through the first years of the current century. The usage of mobile phones and the Internet by youth has increased rapidly in the last decade (Livingstone and Smith, 2014).

In this era, we live in an environment that is substantially different from anything humans have ever known, and it is changing at an ever-increasing rate. This is due to the rapid production of information, the dissemination of that information via an expanding number of media outlets, and the intensive traffic of media vehicles crossing through those outlets. Messages are being sent to everyone, everywhere, continuously. (Potter, 2004). Zarocostas (2020) stated that with the prevalence of SMU, misinformation, and

rumors go faster and further, such as the virus which travels with people and goes faster and further. Therefore, it is a new challenge, and the challenge is how to confront time because you must be faster if you want to fill the gap. What is at issue during an epidemic is ensuring people will do the proper thing to control the disease or to reduce its impact. Hence it is not only about information to ensure people are knowledgeable but also about ensuring people are enlightened to act appropriately.

According to Eseonu and Egbue (2014) adoption of new technology is deemed a motive force for economic evolution and sustainable development. The rate of technology adoption differs according to many factors including the essence of the technology, government policy, social receptivity, and some other social factors. There is a noticeable difference in the acceptance of technology in developing states in comparison to developed countries. Given the multidimensional character of technology adoption and innovation, the difference in technology acceptance among countries can be ascribed not only to economic and technological causes but also to sociocultural factors.

As reported by Herbig and Dunphy (1998) existing cultural settings define the way how innovative technologies are adopted. They stated that a culture that estimates creativity, technical ability, and higher education is more successful at accepting innovative technologies. This implies that the adoption of technology may reflect cultural differences. Moreover, culture impacts attitudes and behavioral intention towards innovation and technology, which have been demonstrated to impact the decision to accept the technology.

The fast change in both technological advances and SM user preferences is one of the main challenges confronting user research in the SM field. Therefore, some of the main preferences or motivations may be steady in the time since they relate to some crucial necessities among individuals, for instance, the necessity for socializing. However, how these steady necessities are gratified, and by what kinds of outlets or communication means, might alter through time and among generations (Brandtzæg and Heim, 2009). Therefore, this research tries to examine the Sudanese university students' SMU during the Sudan crisis between 2019 and 2024 to figure out their reasons and motivations for using such platforms in times of crisis. The Sudanese current crisis began in mid-December 2018 with anti-government rallies in various Sudanese cities following a massive increase in petrol and food prices since the government liberalized the currency rate in late 2018. However, the roots of Sudan's crushing economic crisis can be traced

back to South Sudan's secession in 2011, when Sudan lost three-quarters of the petroleum that had been accounting for half of the budget over the previous decade. The Sudanese economy relies on oil as a primary source of income, and with the cessation of that source, the economic situation has gradually deteriorated since then, resulting in a sharp decline in the value of the currency and an increase in inflation (Ali, 2019).

SM has the strength to change people's attitudes, thoughts, and reactions to information and circumstances in general as well as during crises because it influences the way individuals think, act, and react to information and situations during the crisis (Paul, 2012, as cited in Schroeder et al., 2013). During crisis circumstances, the usage of media means (inclusive of traditional and social media) to obtain and interchange information has raised at a historical and unequaled range (Li et al. 2020; Chao et al. 2020; Allington et al. 2020, as cited in Neill et al, 2020).

There was a considerable rise in SM consumption during crises. (Mustafa, et al. 2020). There was a great demand for information related to the crisis during a crisis. This demand has been met with a comparatively low supply of information from authoritative sources. This gap has created an information void or “a deficiency of data” which made additional space for the prevalence of fake news (IFCN, 2020). The crisis highlighted the centric significance of accessing information (Tinatin, 2021). In times of crisis, people incline to utilize SM platforms more than usual because they rely on online sources as news sources to get crisis-related information for themselves and their loved ones (Abbas, et al. 2021).

Since people may now contribute to the creation and dissemination of news in vast international virtual communities, sharing news on SM platforms has grown in social, political, and economic relevance. Nonetheless, the variables that influence the dissemination of news via SM are not well known (Lee and Ma, 2012).

The research related to SNSs commenced in the mid-1990s (Khang, and Ye, 2012) However, the study conducted by Donath & Boyd (2004) made a revolution in the research on SNSsarea by presenting the term "social media" and indicated ‘Internet-founded devices that are established on the pillars of Web 2.0’ (van Osch & Coursaris, 2014). The French sociologist more commonly known as the sociology father Emile Durkheim, and the German sociologist Ferdinand Tonnies are deemed forerunners of social networks through the end of the 1800s. According to Tonnies, social groupings can arise from mutual conflict or members holding similar values and ideas. His theory

tackled the notions of the social contract in society. Durkheim combined sociological theory and practical investigation. Even though radio was only one-way in the late 1800s, people interacted socially through the telephone and radio (Wren, 2004, Rimskii, 2011, as cited in Edosomwan et al, 2011).

According to ECAR's study on information technology and college students, SMU has steadily increased between 2007 and 2010, and there is a diminishing gap in usage between older and younger students (Smith et al, 2009). Caruso and Salaway (2007) in their study on information technology and college students stated that technological developments are changing and forming our world considerably. Undergraduate students, who are the centerpiece of the study, realize the persistence of technology in their lives. Many of these students typically take information technologies for granted and seamlessly integrate them into their daily lives because they have never known a world without personal access to them. These technologies are also considered an opportunity to make alterations in higher education academic instruction.

Pressly (2021) conducted a study on college students' SMU and its impact on welfare during health crises by examining the impacts SM had during the crisis on Gen-Z college students' mental health. According to Pressly's findings, Gen Z students utilized SM differently during the crisis, and their use of it had a detrimental impact on their well-being. The results also revealed that students' reliance on SM has rose sharply since the start of the crisis, and they were becoming more anxious and stressed out about consuming it. Participants showed changes in their favorite platforms as well. As reported by Pressly (2021), from the inception of the crisis, students have increased their SMU, with more than half of participants spending three hours or more each day on SM. The platforms they used changed in tandem with their usage. Because of a worldwide health issue that produced increasing anxiety and tension, students resorted to communication and entertainment platforms like Snapchat and TikTok rather than photo-sharing sites such as Instagram.

Lenhart et al, (2010) studied SNSs and mobile Internet usage among adolescents and teenagers. They stated that, when viewing the consumption of political news, three out of four faculty-educated internet users (75%) do so online, compared to only 56% of internet users with lesser academic attainment. Furthermore, those who utilize the internet every day are more probably to obtain political news, general news, and information online than those who use it less often.

Zdonek and Król (2021) studied the impact of the health crisis on SM usage, they aimed to investigate the crisis impact on SMU, by considering the users' gender and characters in Poland. Their findings showed that a considerable part of the respondents believed that the health crisis impacted the way they utilized SM. They noted that the top prevalent motivations for SMU were instant necessities, which were typically pragmatic, such as instant contact and information exchange, as well as social necessities. The findings revealed that women are more active on SM, particularly Instagram. Women are also more engaged on Snapchat and Pinterest. Men are more engaged on YouTube. The respondents pointed out social sites that they anticipated would lose or gain popularity in the near term. The general deduction is that the health crisis might be the right time for launching new social sites or promoting the least popular platforms with narrow objectives and new functionalities.

Even though SMU is increasing, and user-created content is bursting on websites such as Facebook, YouTube, and MySpace, little scientific research has been carried out regarding individuals' SMU, and a lot of studies are notionally oriented (Heinonen, 2013). Many rising studies presently are putting a focus on the SMU in various service areas, which include libraries, sports, museums, and entertainment places (Rotschil; 2011, Hall, 2011; Kidd, 2011, as cited in Heinonen 2013). However, there is a need for more attention to what people and active users do on SM. Also, additional research on SM is required to understand consumers' massive interest in and participation on SM (Heinonen, 2013). Pennycook, et al (2020) stated that people often fail to take into consideration the content accuracy when they try to take a decision about what to share during the crisis and that people who are more untaught or less well-informed about science are more probably to believe and share untruths.

The contemporary SM research underlines individuals' motives for generating content or the role of character in the SMU. A major part of current studies is investigating individuals' reasons for SMU (Baker & White, 2011; Shao, 2009; Park, Kee, and Valenzuela, 2009; Raacke, and Bonds-Raacke, 2008, as cited in Heinonen, 2013). However, what is needed is a further comprehension of what individuals do on SM and the impact of these activities on their behavior and perceptions. More significantly, information about the interests of individuals is limited (Heinonen, 2013). So, the leading reason for conducting this study lies in the clear shortage of theoretical research addressing SMU during crises.

According to Shikani (2010), it is important to study the nature of the messages that flow through new media, the swiftness of their flow, and the methods of their distribution and reception, because it led to vital changes in the role and functions of the media. SM users are becoming more active online, consuming, engaging, contributing, and sharing a variety of online material. SM activities of consumers depend on their motivations for these activities, which include social connections, amusement, and information. (Heinonen, 2013). SM drastically altered how people consume media, but crisis research needs to explain exactly how this change has happened (Park and Avery, 2018).

1.2. Problem Statement

With the prevalence of smartphone and Internet usage, SM platforms become an integral part of human daily life, especially in the communication process between each other, not only as tools to share and create information but also as tools for establishing and maintaining social relationships. As of the end 2000s, SM has begun to gain traction in mainstream media. It is become an intrinsic component of our everyday lives. Given its presence and nature, SM has long been associated with the impact on teenagers and young adults (Pressly, 2021). As reported by Ahn (2011) youths spend a substantial part of their daily lives connecting on SM. This raises concerns and questions regarding how they interact in these virtual communities and how they utilize SM. Consequently, the need to carry out studies on the SMU arises from its increasing significance in the ever-developing era of information and communication technology especially in periods of crisis.

Even though SMU is increasing, and user-created material is bursting on websites such as Facebook, MySpace, and YouTube, little academic research has been carried out regarding individuals' SMU, and a lot of studies are notionally oriented (Heinonen, 2013). The contemporary SM studies in Sudan concentrated on the Internet effects and the SNSs' role in several aspects such as culture, forming public opinion, students' issues, and students' attitudes towards the Internet (Nemir, 2018; Mohammed, 2013; Wedaatallah, 2014; Saleh, 2012). While a major part of current studies investigates the SM site's role in shaping the culture of students (Aldaw, 2017; Musa, 2017; Algam, 2018).

However, there is a need for more attention to what people and active users are doing on SM, particularly during crisis time. Therefore, this gap needs to be filled by

investigating SM platforms profoundly from different perspectives to understand how students access these sites, what motivations drive them to use these sites, what they do on SM, how they benefit from it, and what SNSs are most used by students as sources of information during time of crisis. Thus, the research problem lies in the obvious shortage of theoretical research addressing SMU during crises. Considering the growing significance of SM as a source of news during crises, it is crucial to comprehend what is known and what remains to be assessed regarding SMU (Fraustino et al. 2012). In this context, the study debates whether students rely more on influencers of SM or traditional media to obtain crisis-related information through the framework of the two-step flow communication model of Katz and Lazarsfeld (1955).

As stated by Niles et al., (2019) the SMU amongst the public has proven previously to rise pointedly in instances of crisis and natural catastrophes. In this context also, Tuck and Thompson (2021) indicated that the students' use of SNSs possibly altered during crisis time. The use of mobile devices and the internet by youth has rapidly risen in the last decade (Livingstone and Smith, 2014). As SM consumers become more active online, they consume, participate, contribute, and share a variety of online information. (Heinonen, 2013). There is a growing interest in investigating and evaluating the traits and prevalence of problematical and undue consumption of SM (Kuss & Griffiths, 2011. Andreassen et al., 2012).

According to Brandtzæg & Heim (2009) studying why individuals utilize SNSs can provide a deep vision into the internal motivations that lead them to utilize SNSs and consequently result in a better comprehension of how to evolve prospering social networking. Based on this view, the research seeks to examine the university students' SMU during the crisis time to obtain a deep insight into the student's motivations and preferences, which in turn can assist in understanding the present state of SM usage (SMU) in Sudan. The current Sudanese crisis began when demonstrations erupted in various Sudanese cities against the government due to the deterioration of economic conditions after the government decided to liberalize the exchange rate in late 2018 (Ali, 2019). People are more active online especially, during times of crises and disasters, they increasingly use SM for the most up-to-the-minute information (Fraustino et al., 2012). Consequently, there is a need to find out how much they utilize SM outlets, how they consume information regarding the crisis and interact with it, and how they verify the trustworthiness of information provided by SM during the time of crisis.

1.3. Significance of the Research

Due to the importance of the growing role of modern communication technology, which has a great impact on the format and content of media messages, there is a necessity to conduct a study on SMU (Musa, 2017). Although there is an increasing concern about studying SM, there is still a deficiency in research regarding university student's SMU during crises. Since this research addresses an important aspect of contemporary communication technology, it significantly focuses on investigating the students' SMU to bridge the gap, especially in the literature regarding students' SMU during crises, and to partake generally in the literature on SMU. In times of crisis, people lean to utilize SM platforms more than usual because they rely on online sources as news and information sources (Abbas, et al. 2021). Large number of novel accounts are generated every day on SNSs; however, a lot of these accounts expire quickly. One type of online community that relies on user contributions is SNSs. This poses the dilemma of how to get consumers to participate and use these sites continually (Obrist et al., 2008). Therefore, it is essential to comprehend the people who use these SNSs, and their purposes and personal motives for doing so. In this context, Preece and Maloney-Krichmar (2003) indicated that evolving online communities need a profound comprehension of social connection and the intermediating impacts of technology.

Usage of SNSs is among the most prevalent actions of today's children and youngsters (O'Keeffe & Clarke-Pearson, 2011). Millions of today's young adults are using SNSs. However, less is known regarding why, and how they use these SNSs (Pempek et al., 2009). Therefore, the significance of this research lies in casting light on students' SMU by investigating how they access SM platforms, what they do on these platforms, what their reasons and motivations are for using these platforms, what are their preferences, how much they use SM platforms and consume information related to crises on such sites. Shikani (2010) stated that in this era the significance of research resides basically in the absence of media theorizing, despite our awareness of the importance of the media and its developmental role, there is almost a theoretical absence of the issues raised by the media and its repercussions on the media reality in this era of information.

While most research related to university students' SMU in Sudan centered on studying social networking from a cultural perspective, this research approaches the students' usage of SNSs from a different outlook to understand the students' reasons for

SMU specifically during times of crisis. Thus, this research provides a new grasp into the students' SMU, especially during crisis time.

This research partakes in the literature on SMU during crises by describing students' behavior on SM and their motives for SMU. Moreover, the study deepens the comprehension of different SMU and the activities of Sudanese students, and their motives linked with these activities on such sites. This research stressed the significance of SM in this age of information technology and new media.

In this respect, the findings of this study could provide insight into the usage of SM during crises in the context of Sudanese university students, since the study facilitates the understanding of the students' SMU during the crisis, their preferences among these platforms, and their motivations for using such platforms during crises. The study's findings could also assist SM users and people who experiencing and managing crises in interacting rightfully with the information disseminated on SM during crises.

Also, through the descriptive analysis done by this research, scholars and academic institutions may have a new approach on how to investigate and address students' use of SM during crisis time. This may act as a tool for upcoming studies and that in turn will lead to further discussion and debate on SMU. In other words, this can establish a base for further research and give rise to new discussions in this field.

Moreover, the study's results could offer scholars, researchers, SM and crisis communication researchers, and academicians a different perspective on studying SM, which in turn could contribute to the literature in the field of SM, and particularly in the context of crises. Furthermore, the study findings could assist governments, media institutions, and communication administrators in developing and implementing future communication plans, practices, and recommendations.

1.4. Objectives of the Research

This study is a quantitative descriptive research based on a survey research method that tries to investigate and depict the present state of SM platform usage by Sudanese university students, especially during crisis time. The central aim of this study is to probe the reasons and motives of students for utilizing these platforms and determine their preferences by analyzing the reasons and motivations that drive them to use SNSs during times of crisis. Also, the research aims to understand how students access these sites, what they do on SM, and how they capitalize on it specifically during times of crisis. Moreover,

to find out their preferences, adoption, and acceptance of social networking. This knowledge assists in identifying the students' motives and incentives beyond the usage of SNSs. Furthermore, the research intends to debate if these motives agree with the four motivating needs (personal identity, information, entertainment, and social interaction) proposed by McQuail (1994). Furthermore, the research aims to assess to what extent students use SNSs and consume information related to the Sudanese crisis on such sites.

The research also intends to come up with descriptive information about the usage of SNSs by Sudanese university students especially during crises. The research also seeks to probe the activities SNSs users perform on SM. Moreover, it aims to explore what types of actions users perform to assess the reliability of SM as a source of information and to verify the trustworthiness of information provided on SM platforms during crises. For understanding and assessing the students' usage of SNSs the questions address how they use SM platforms, why they use them, how they interact with information related to crises on these platforms, and which social networking platform they prefer the most and why, and do they rely more on traditional media or SNSs to obtain information related to crises? Another reason for conducting this study is to address and close the evident gap in the present literature on SMU among Sudanese university students during crises.

The research was conducted based on the following study questions which were established to bridge the gap in the literary text on students' usage of SNSs during crises, as well as to create links by utilizing the existing literature on SMU. Each question of this research was developed after a comprehensive search process on this topic to obtain the required data and information from participants which in turn can offer needed visions into the students' access to, and usage of SNSs and their reasons and motivations for using these sites. For these purposes, to reveal the students' usage of SM a survey technique was applied to university students in Sudan to reply to the following questions:

1.5. Research Questions

1. How do students access the Internet?
2. To what extent do students use and adopt social media platforms during the crisis?
3. What is the most popular social media platform among students during the crisis?
4. How do different age groups of students interact with social media during crises?

5. To what extent do students trust information sources and how do they verify the trustiness of information on social media?
6. Are there significant differences between students' genders in using social media during the crisis? If so, what are these differences?
7. What are the students' reasons for using social media platforms during the crisis?

1.6. Limitations of the Research

This study has many limitations such as time, and location. The research was conducted on students from universities located in Sudan during the period from January 2023 to January 2024. Therefore, this study targeted only Sudanese university students. Thus, the findings cannot be generalized easily to other countries, they are valuable for scholars, researchers, academicians, governments, social scientists, and communication administrators, especially in countries that have similar situations to Sudan.

1.7. Definition of Terms

The following definitions aim to assist readers in better comprehending the terms used in the research and to make it easier for them to understand the context of the remaining sections of the study.

Social media: Technologies that enable human interactions by using information or data. Social media is a term used to refer to any online platform that enables social interaction (O'Keeffe & Clarke-Pearson, 2011).

Social media is a group of web-based applications built on the technological and ideological foundations of Web 2.0, which enables the creation and exchange of user-created content (Kaplan and Haenlein, 2010).

Social Network Sites: Network-based services that enable individuals to create a public or semi-public profile within a limited system, articulate a list of other users with whom they have a connection, and traverse and view their own and others' connections within the system. The nature and naming of these relationships may differ from one site to another (Boyd and Ellison, 2007).

SNSs are applications that allow users to connect by creating personal information profiles, inviting friends and colleagues to have access to those profiles, and sending e-mails and direct messages to each other. These personal spaces can contain any type of information, including video, photos, audio files, and blogs (Kaplan and Haenlein, 2010).

Crisis: Alexander (2005) described a crisis as an unusual circumstance that puts forward a great danger to business and might provoke swift policy changes as it attracts media and public attention and endangers public trust.

2. LITERATURE REVIEW

This chapter discusses the literature regarding SMU. It commences with an articulation of the theoretical structure that guides the research before moving on to reviewing literature regarding themes such as new media, the main factors of new media, SM history, definitions of SM and SNSs, differences between SNSs and SM, SMU, types of SM, and examples, SM role during crises time, how and why individuals use SM during crises, and the state of internet usage in the world and particularly in Sudan. The chapter also explores the current literature on the Internet and SMU in Sudan. Moreover, the literature presents the usage of the internet, SM, and mobile connections in Sudan.

2.1. Theoretical Framework

A great deal of effort has been made to grasp the usage, preference, adoption, diffusion, and acceptance of media and technology among users. Amongst the most essential of these efforts are the Technology Acceptance Model (TAM) (Davis, 1989), the Unified Theory of Use and Acceptance of Technology (UTAUT) (Venkatesh et al., 2003), and the Uses and Gratifications theory (U&G) (McQuail, 1987). In the matter of user motivations, The U&G theory has been the most prominent way for explaining why certain media behaviors occur. Users are viewed as purpose-driven, with specific reasons for using and not using various media. (Brandtzæg and Heim, 2009).

As stated by McQuail (1994), four basic needs drive individuals to use media these are information, entertainment, personal identity, and social interaction. How and in what way these motivating needs could clarify SNSs' behavior is not sure as well. Another reason may be that research on online communities previously tended to define the community works for an outer audience without handling the groups' necessities or their participants (Feenberg and Bakardjieva, 2004).

Investigating consumer motivations to be involved in SM allows an understanding of consumers' activities. Studies revolving around consumers' motivation are increasingly emerging fast. The classic approach of U&G (Blumler and Katz, 1974) became the beginning point and basis for much research on internet use generally (Ko, Cho, and Roberts, 2005) and particularly SM sites and user-created content (Stafford, Stafford & Schkade, 2004; Shao 2009, as cited in Heinonen, 2013).

U&G research seeks to investigate the audience to understand media uses and effects because people are viewed as active in the process of choosing and using media and its content (Perse, 1990). From this view, this study investigates the Sudanese university students' SMU, especially during crises. The study's theoretical framework is based on the U&GT (Katz et al., 1973) which demonstrates the psychological and social necessities of using media. The first major presumptions of U&GT were founded on the engaged audience, purpose-driven use, and necessities. As a result, it was determined that using U&GT in the context of new communication technologies is safe. Motivations and satisfaction have become more important parts of audience analysis because of the availability of diverse media channels and varied choices (Ruggiero, 2000). The study utilizes the U&GT to come up with a comprehensive knowledge of why students use SM.

Some efforts were made to comprehend the reasons why people engage (Bishop, 2007) or do not engage in SNSs and online societies (Preece et al., 2004, Brandtzæg and Heim, 2008). These efforts have mainly evolved theoretical frameworks or have focused empirical attention on a specific type of user. Research conducted on virtual societies emphasized several motivational elements that drive people to use SNSs namely finding individuals with shared interests, needs, and experiences, sociable and supportive relations, strong senses of social belonging, and a feeling of group identity (Waterson, 2006, Rheingold, 2000, Preece, 2000 as cited in Brandtzæg and Heim, 2009).

2.1.1. Uses and gratifications theory

U&GT was first presented in the 1940s when specialists commenced to examine why individuals prefer to use different media types. In the following few years, research on U & G mainly concentrated on the satisfaction that media users desired. Afterward, in the 1970s, scholars directed their concern toward the consequences of media usage and the psychological and social necessities and needs gratified by media. Nowadays, the theory is usually attributed to Jay Blumler and Elihu Katz's works in 1974. With the rapidly rising media technologies, research regarding U&GT has become more significant than ever in the comprehension of individuals' motives for preferring media and the fulfilments they obtain from it (Vinney, 2019).

As specified by McQuail (2010) the U&GT is a type of individualistic operational theory and study that attempts to clarify media U&G concerning audience members' motivations and self-perceived requirements. Furthermore, this is one variant of the actual

audience hypothesis, which has been employed in the research of media impacts because any effect must be consistent with the audience's needs.

McQuail (2010) also stated that the main presumptions of the theory when it was revived and developed two decades later (in the 1960s & 1970s) were as shown:

- The selection of content and media is typically reasonable and focused on achieving precise aims and contentment. As a result, audience formation makes sense, and the audience is engaged.
- Members of the audience can voice and express their awareness of the media needs that emerge in both social and personal contexts, both individually and collectively, in terms of motivations.
- In a broad sense, the cultural and aesthetic characteristics of content are far less important in appealing to audiences than the satisfying of several social and personal demands (such as shared experience, relaxation, passing time, and so on).
- In principle, all or most of the elements that influence audience formation (motivations, obtained or supposed contentment, media selections, and background parameters) could be monitored.

Also in this regard, the theorists of the distinct U&G approach of Katz et al (1973) identified five principal presumptions these are:

1. The audiences are active, and their usage of media is objective-oriented.
2. The audience member takes the initiative in connecting their needs for gratification to a specific medium choice.
3. When it comes to gratifying needs, the media competes with other resources.
4. People can give researchers a clear image of how they use media by being self-aware enough about their interests, motivations, and media consumption.
5. Only the audience has the authority to assess the value of media content (Kunczik, Zipfel, 2006 as cited in Tanta et al. 2014).

Regarding the gratification types that recipients can gain when they consume media, Katz et al (1973) stated that the types of gratifications are as much as several recipients themselves, and the same material can satisfy various needs of diverse people. The main gratifications from media use (Media gratifications sought or obtained) that have been identified by McQuail are as follows:

- Education and information
- Advice and guidance

- Relaxation and diversion
- Social contact
- Cultural satisfaction
- Value reinforcement
- Emotional release
- Lifestyle expression
- Personality formation and approval
- Security
- Sexual stimulation
- Killing time

According to Katz et al., (1973), U&G could be categorized into five classes linked to five clusters of human necessities:

1. Cognitive needs: related to obtaining and strengthening information, and knowledge, grasping social setting, exploration, and curiosity.
2. Emotional needs: that related to strengthening emotional, and aesthetic experience, and pleasure.
3. Personal identity: necessities related to credibility, stability, confidence, social standing, self-assurance, personal stability, honesty, and the desire for self-regard, which combine both cognitive and affective elements and can be also classified as integrative needs.
4. Integration and social interaction: this refers to familial relationships and friendship, contact with the world beyond, and association needs. These can also be viewed as performing integrative functions.
5. Escapism needs: that related to escape or stress release, switching focus from the bad to the happy.

The U&GT depends on two rules regarding users of media. Firstly, it describes media users as engaged in their media consumption choices. According to this viewpoint, people do not absorb media passively. They engaged and motivated in their media choices. Secondly, individuals are conscious of their motives for choosing various media preferences. To select the media that will assist individuals fulfill their specified needs and aspirations, they depend on their understanding of their motives (Vinney, 2019). The U&GT proceeds to summarize five presumptions based on those tenets:

- Media usage is aim-directed. individuals have the motivation to use media.
- Media is chosen with the hope that it would fulfill certain desires and necessities.

- Media impact on behavior is strained through psychological and social elements. Therefore, social context and personality influence the media selections that an individual makes and the individual's reading of media messages.
- Media are competing with other types of communication to draw the person's concern. For instance, a person may decide to engage in a direct talk regarding an issue rather than watch a documentary about it.

Since people typically control the media, they are not greatly impacted by it.

The U&G notion emphasizes the individual's power over that of the media. Person distinctions moderate the interaction between media and its impacts. Consequently, media impacts are influenced the same by users of media as by content of media. Therefore, even if persons are exposed to the same media message, each will be influenced differently (Vinney, 2019).

The idea that media usage is determined by the perceived satisfaction, needs, motivations, or wishes of potential audience members is nearly as ancient as media research itself. Typically, audiences are formed based on similarities in individual necessities, tastes, and interests. Many of these appear to be psychological or societal. Such needs include information, companionship, leisure, amusement, and escape. Audiences for specific media and types of media material can frequently be grouped based on such varied motivating categories. The technique also has been utilized to study the attraction of emerging automated media (Perse, 1990). Relative attraction towards different media relates to differences in expectations and gratifications sought-after (McQuail, 2010).

2.1.2. Research on uses and gratifications

Research on U&G has revealed a variety of reasons why people use media, including information, habit, relaxation, friendship, spending time, and escape. Furthermore, a recent group of research explores individuals' usage of media to satisfy upper-level neediness such as identifying sense and weighing values. All sorts of media, from radio to SM, were studied in respect of U&G (Vinney, 2019). Whiting and Williams (2013) conducted extended interviews with participants aged between 18 and 56 years old as part of qualitative exploratory research on why people use SM, using a U&GT. Their study's findings revealed ten U&G for using SM namely social connection,

information searching, entertainment, passing time, relaxation, convenience utility, communicational utility, opinion expression, information sharing, and surveillance.

2.1.3. Uses and gratifications and new media

Scholars observed that new media contains numerous characteristics that earlier types of media do not. For instance, new media consumers have more discretion over what and when they connect with, as well as a wider range of content options. This raises the number of gratifications that the usage of new media can provide (Vinney, 2019). Song et al., (2004) conducted early research on Internet U&G, which was issued in the Journal of CyberPsychology and Behavior and indicated seven gratifications for Internet usage namely: seeking information, aesthetic experience, financial compensation, entertainment, relationship maintenance, personal status, and simulated community. The simulated society might be referred to as a "new" satisfaction because it has no equivalent in other media types or earlier research. Stafford et al., (2004) found three satisfactions for using the Internet in a study available in the Decisions Sciences Journal. Two of these satisfactions (content and process satisfaction) had previously been identified in research on the uses and benefits of television. Nonetheless, a novel form of social pleasure, notably through the usage of the internet, has emerged. These two pieces of research demonstrate that individuals utilize the Internet to fulfill social and common necessities.

In the later phases of the theory development (around the middle of the 1980s), a difference between satisfaction requested and gratification gained was put forward. If the desired satisfaction is not realized and obtained, the recipients might discontinue utilizing a specific media or ingesting certain information. In contrast, the recipients may receive gratification that they did not initially seek. A habit was mentioned as another motivation for consuming media content in several of the following categorizations. (Kunczik, Zipfel, 2006 as cited in Tanta et al. 2014).

Several research has been also carried out to reveal the gratifications sought and obtained by making use of SM. For example, a study conducted by Park et al. (2009) on Facebook group users' gratifications, available in Cyberpsychology & Behaviour and the study discovered four necessities for Facebook group involvement. These necessities are socialization by keeping in contact and making contacts, entertainment by the usage of Facebook for leisure or amusement, looking for personal stats through sustaining one’s image, and information searching to discover products and events. In this regard, a closer

study carried out by Chen (2011) revealed that users of X (formerly Twitter) satisfied their needs for communication through social networks. The fulfillment of this need has increased with increasing use, both concerning the time an individual has been engaged on X (formerly Twitter) and the number of hours an individual spends utilizing X (formerly Twitter).

U&G is a media usage model developed by mass communication researchers that directs the evaluation of user motives for media access and use. Previously, it was utilized in research and deciding on the offer of rising radio and television media. Late modifications to U&G research for the Internet are inadequate and do not describe substantial new Internet-particular satisfactions (Stafford et al., 2004). Besides U&G theory the study also debates the theory of the Two-step flow of communication. Katz and Lazarsfeld are commonly credited with developing the two-step communication flow (1955-1966). This theory is unique in that it emphasizes the importance of interpersonal relationships in the mediation of mass information sources. According to the theory hypothesis, most people obtain information from personal sources rather than the media. This highlights the importance of social groups and opinion leaders in the mediation process (Soffer, 2021). The two-step flow of communication hypothesis was first proposed by Paul Lazarsfeld, Bernard Berelson, and Hazel Gaudet in their 1944 study, The People's Choice, which concentrated on presidential election campaign decision-making. The researchers anticipated finding evidence of the direct influence of media messaging on the intentions of voters. Surprisingly, the researchers found that informal personal interactions were more often reported as impacting voting behavior than exposure to radio or newspapers. Katz and Lazarsfeld developed the two-step flow theory of mass communication using this data (Lazarsfeld, Berelson, and Gaudet, 1968). Katz and Lazarsfeld (1955) established the two-step flow model to clarify how mass media affects the general audience. According to the approach, rather than immediately affecting the entire public, media messages are filtered by opinion leaders, who analyze and contextualize the information over several small group engagements. Although this theory has had a significant impact on media influence research, Gitlin (1978) found that the information distribution and influence of mass media are more complex than the two-step flow model (Stansberry, 2012)

While the U&G idea is still prevalent in media studies, it has received numerous challenges. For instance, the approach understates the significance of media.

Consequently, it may ignore how media impacts people, particularly unintentionally. Moreover, while audiences are not always passive, they can also be active at times, which the theory does not account for. Eventually, some opponents argue that U&G is too broad to be considered a theory and must instead be viewed as a method of media research. (Vinney, 2019).

Contrary to some scholars of mass communications who have debated that the U&GT is not a precise social structure theory, Ruggiero (2000) asserted the significance of the theory and stated that any effort to predict the future directions of the theory of mass communication should severely encompass the approach of U&G. Also, Ruggiero emphasized that the evolution of computer-based communication resuscitated the importance of U&G. Indeed, U&G have always offered a radical theoretic approach to the early phases of each new mass communication outlet, namely radio, newspapers, and television, presently, the Internet. Even though scientists are probably to keep employing typologies and traditional instruments to respond to issues about media usage, we should also be willing to broaden our contemporary notional paradigms of U&G. Current and upcoming approaches should involve notions like interaction, hypertextuality, demassification, and synchronicity. Researchers must be also interested in investigating the qualitative and interpersonal views of mediated communication using a more general and comprehensive methodology.

2.2. The Definition of New Media

Since the 1960s, the phrase "new media" has had to encompass a broader and more diverse range of applied connection technologies. The Handbook of New Media editors (Lievrouw and Livingstone, 2006) specified the difficulty of stating exactly what "new media" entails. They prefer to identify them in a compound way, by connecting information communication technologies (ICT) to their related social settings and combining three essentials: technological artifacts and devices; practices, activities, and usages; and social organizations and arrangements that emerge from the practices and devices. As previously indicated, the same description applies to old media, even though the differences in artifacts, use, and arrangements. The fundamental characteristics of new media appear to be interconnection, ease of access to individual consumers as senders

(and/or) receivers, interactiveness, variety of usage and unlimited character, and ubiquitousness and delocatedness. (McQuail, 2010).

Shikani (2010) stated that the new media technology did not abolish the old means of communication, but rather developed them, changed them significantly, and led to the merging of the various media, which in the past were independent means, not related to each other, in a way that eliminated the boundaries separating those means. The mass media have become characterized by an international and global feature. News as the most prominent content of the means of communication has greatly benefited from the current developments in new media technology, which has led to a rise in the effectiveness of the means of communication for its news functions at the international and local levels, and that the present developments in new media technology particularly in television transmission and reception and the Internet. Also, these developments have had their effects on some other means such as cinema and press.

It cannot be denied that it is difficult to provide a particular definition of new media, despite its technical sophistication and political, cultural, and economic significance, its theorization remains lost between humanities and information and communication theories (Shikani, 2010). It can be stated that new media is the media of the information era, as it was the result of the mating of two crucial phenomena that were known in this era, namely, the phenomenon of information explosion, and the phenomenon of distance communication (telecommunication).

The new media relies on computers and remote communications to produce, store, and distribute entertainment and information. This characteristic provides the public with simple and affordable access to entertainment and news. It is a prevalent aspect of both new and old media. The distinction is that new media can deliver a new function that traditional media cannot, namely interactivity. Interactivity is the ability of the new means of communication to reply to the user's conversation, just as it occurs in the conversation process between two persons. This feature has added an important new dimension to the current mass media patterns, which usually consist of one-way products that are issued from a central source such as the newspaper, television, or radio channel to the consumers with the ability to choose the sources of information and entertainment whenever and in the way they need (Shikani, 2010).

The new media is also characterized as multimedia, which implies that the information is presented in a mixed form of text, picture, and video, which makes the

information stronger and influential. This is digital information that is created, saved, updated, and communicated electronically. The new media is also distinguished by the diversity of its means and ease of usage, both of which have altered communication behavior patterns. (Taymour and Mahmoud, 1997).

2.3. Social Media History

There are many thoughts related to the first emergence of SM. Throughout history, people have evolved technologies that facilitated the process of communication with each other (Carton, 2009). SM has evolved into several various forms involving images, video, text, and audio through the evolution of mediums, photo sharing, message boards, search engine marketing, podcasts RSS (really simple syndication), video sharing, professional and social networks, Wikis, and micro-blogging websites (Wright, and Hinson 2009). In other words, SNSs have developed through time to the current era of variety that utilizes digital media. Anyhow, SM is not that newborn. Moreover, it did not begin with computers but rather the telephone.

Phone phreaking began in the 1950s; the phrase refers to a rogue search of the telephone network. This technique was realized by using homemade electronic instruments that allowed an unlawful approach to the system of the telephone to make gratis calls. Phreaks completed their objective by finding telephone firm test lines and conference circles. Brett Borders indicated that phreaks were capable of hacking into the company's underused voicemails and hosting the first podcasts and blogs (Borders, 2009, as cited in Edosomwan et al., 2011). SM is not all that novel, what is new are only the shapes that it takes. In other words when looking at SM throughout its history, from the perspective of this explanation, “technologies that simplify conversations,” it’s quite simple to perceive that these technologies have been jointly with us for ages. Of course, many of the media such as radio, telephone, e-mail, etc., could be utilized for one-way connections (i.e., in the former media broadcast meaning) (Carton, 2009).

Email first became widely available in the 1960s (Borders, 2009). However, until 1991, the Internet was not accessible to the people. Email was initially designed to send messages between two computers, but both machines needed to be online. At present, email servers receive and save messages, allowing recipients to read them whenever they want. Probably the oldest form of SM was termed “phone phreaking,” which required

random exploring and testing the boundaries of the phone system. It started in the 1950s, with exploratory technology users trying to determine methods to “deceive” the phone system to evade expensive long-distance phone conversations (Borders 2009, as cited in Korenich et al., 2014).

SM had considerably evolved in the 1970s. The MUD which was known originally as Multi-User Domain, or Multi-User Dimension, was an actual time virtual environment with party games, online chat, and narrative games. MUD is text-built and asks users to write instructions by making use of a natural language. BBS stands for bulletin board system, BBS and MUD were developed in the same year in 1978. Users must log in to the system to do many activities such as reading news, uploading, and downloading software, or exchanging messages. During the first years, access to BBS was through a modem via a telephone line by one individual at once. Early, BBS did not include graphics or colours. BBS are seen as the antecedents of the WWW. (Edosomwan et al., 2011).

During the 1990s several SNSs were developed. It could be stated that social networking seriously commenced during the 1990s with the emergence of websites like BlackPlanet, MoveOn, Six Degrees, etc. They were online societal platforms that enabled individuals to interact and communicate, which included sites for national advocacy and a societal network built on a network of contact models (Edosomwan et al., 2011). It's more important to consider what you can accomplish with one tool that you can't with others, who uses it, and how effectively it evolves discussions with the individuals you desire to reach. Looking back over the history of SM, we can find that the popularity of several platforms has regressed and retreated; some of these platforms survive, while others do not (Carton, 2009).

SM obtained a major boost in 2000 with the emergence of numerous SNSs. This significantly increased and revolutionized the contact of people and institutions who have a mutual concern in movies, songs, education, and relationships via societal interaction. Those sites were introduced involved sites such as Six Degrees, LunarStorm, Wikipedia, Cyworld, and Ryze. Sky Blog, Friendster, and Fotolog were commenced in 2001. LinkedIn, LastFM, MySpace, and Hi5 emerged in 2003. Whereas famous names such as Facebook Harvard, Mixi, and Dogster had evolved in 2004. The continuing development of the web had a profound impact on each aspect of our community, from leisure and scholastic life to work and business. In 2004, the term “Web 2.0” began to be used by

people to indicate the novel viewpoint and comprehension of the methods in which developers of software and end users utilize the Web (O'Reilly, 2005, as cited in Väljataga et al., 2011).

Throughout 2005, great names such as YouTube, and Yahoo!360, and Black Planet (Heibergert, Junco, & Loken, 2011, as cited in Edosomwan et al., 2011). Throughout the long history of humanity, people have evolved technologies that enabled them to easily communicate with one another. There are undeniable distinctions between Facebook and telephone party lines, the most important of which is the Internet's global reach as well as its multimedia capacities. What distinguishes such technologies are the capacities they supply and the forms they take—there are great distinctions among X, Facebook, and YouTube. Nonetheless, they all end up as outlets that facilitate us to talk to each other (Carton, 2009).

the year 2005 witnessed the dawn of many SNSs like Facebook, YouTube, and Yahoo 360. Facebook was restricted only to the society of Harvard and then became accessible to the students at secondary school (Jasra, 2010). In 2007, Facebook grew astonishingly, as it obtained more than one million new consumers weekly. Yahoo 360 was developed by Yahoo! Inc., and users can generate a profile with picture galleries and be in contact with other individuals who have the same interests or connect with some friends as in any other social network website. YouTube had evolved by three PayPal staff who desired to make a site in which individuals can load and share several videos. It was considered a transformation in the SM field as it required a plain interface in the world when it was difficult and barely impossible to upload clips online (Edosomwan et al., 2011). In the last few years, SM has developed from only being a primary tool for cooperative creating and sharing content to being an inseparable part of the current media landscape (Weinberg, 2009; Evans & Bratton, 2008, as cited in Singh, et al, 2012).

In 2008 Ping.fm was founded, and it was described as "the automagic" microblogging and networking web services that allow consumers to post on several SNSs at once (Edosomwan et al., 2011; Hendrickson, 2008). Till 2010, many SM were created namely, Friendfeed was founded in October 2007, it was a feed to integrate the news flashes from SNSs and SM. In 2009 Facebook bought Friendfeed (Jasra, 2010). Google Buzz was established in 2010, it is a messaging tool and social networking that combines an online email program that works via the famous Gmail facility, it allows users to share status changes, links, and photos with their network members, besides

pulling their activities on other websites such as X (formerly Twitter) and Facebook (Edosomwan et al., 2011; Gross, 2010).

2.3.1. Definition of social media

Nations (2021) stated that SM is difficult to specify, and it is a bidirectional street that grants you the capability to connect. SM is a term that is commonly spoken about nowadays, often to define what we share on apps and websites such as Facebook, Snapchat, Instagram, X, etc. The best way to reach an explicit comprehension of SM is to break it up into plainer words, namely, to review each word individually: the term social indicates "interacting with others by both sharing and receiving information. The term media refers to an instrument of communication, such as the internet (while conventional media include newspapers, TV, and radio). By combining these two separated words, it can be reached to a main definition: SM are web-based communication instruments that allow individuals to communicate with each other by consuming and sharing information (Nations, 2021).

Carton (2009) stated that when looking at each term separately. The word social indicates the interaction of humans with other humans. Whereas the word media (in the communications situation) implies “technology used to store and transmit data or information.” Consequently, when merging those two definitions together SM can be defined as: “Technologies that simplify communications between people by utilizing information or data.”. SM is a phrase that indicates any online platform that enables social contact. These include SNSs (e.g. X, Facebook, and MySpace); virtual worlds and gaming sites like Second Life, and Club Penguin; video platforms e.g. YouTube; and blogs. Those sites provide youths with a portal site for communication and entertainment, and they have rapidly risen recently (O'Keeffe & Clarke-Pearson, 2011).

SM are outlined as interactive web tools that display content that might be generated, manipulated, or impacted by users. SM facilitate interactive communication at the right time and promote discussion and content sharing between message creators and consumers (Seltzer & Mitrook, 2007; Taylor & Perry, 2005; Wright & Hinson, 2009 as cited in Fraustino et al., 2012). SM are considered as linked platforms for information exchange commonly between users (Boyd & Ellison 2008).

SM allow a conversation to reach a larger audience by using the notion of the long tail, which implies talks that can be moved to several forums. The organization uses a

variety of contact channels, including phone calls, emails, and meetings. These outlets have restrictions like failing to write notes during meetings, forgetting a message, and looking for info in a massive email list, which can be difficult. The usage of SM sites has expanded the number of channels of communication and improved their efficacy in the company. Individuals no longer must squander their time because it is now possible to deliver messages via prompt chat or tweet and receive a reply extremely fast (Edosomwan et al., 2011). SNSs furnish institutions with a space to connect with key audiences and enable users to engage with each other on areas of common concern (Bortree and Seltzer, 2009).

SM is a term of the 21st century utilized widely to describe a variation of the Internet instrument or technology that underscores the societal features of the Internet as a medium for communication, creative expression, and collaboration, and is used often interchangeably with terms social software and Web 2.0 (Dabbagh and Reo, 2011, as cited in Dabbagh, and Kitsantas, 2012). Although there is great debate about the appropriateness of the term Web 2.0 and its explanation, the major concept is that the Web and its apps are utilized ever more for information sharing, creativity improvement, collaboration amongst users, and social interaction. Simply said, Web 2.0 tries to exploit the economic potential of social interactivity (Barnwal, 2007, as cited in Väljataga et al., 2011).

SM examples contain experiences and resource-sharing instruments like WordPress, Delicious, and X (formerly Twitter) that allow social/online bookmarking, microblogging, and blogging; wiki software like PBworks which allows users to create cooperative workspaces; media-sharing tools namely YouTube and Flickr which allow social tagging; SNSs, for instance, LinkedIn and Facebook that provide social interacting; and online (cloud-computing) office means like Google Apps which permit calendar and document editing and sharing among other items (Dabbagh & Reo, 2011; Kitsantas & Dabbagh, 2010, as cited in Dabbagh, and Kitsantas, 2012). Wright and Hinson (2009) stated that SM presents web-based information generated by people to facilitate communication and now become one of the world's main sources of social interaction since people share experiences and stories. Facebook, X (formerly Twitter), MySpace, and Linkedln are some instances of SNSs and there are about 30 SNSs that are efficient worldwide (Sørensen, Porras, Hajikhani, & Hayar, 2014, as cited in Ali et al., 2020). Also,

Morozov (2011) stated that most Internet users now feel more at ease sharing their thoughts and actions with the rest of the world thanks to the emergence of SM.

With the swift expansion of smartphones, SM turned into an essential instrument for preserving social relationships, entertainment, and browsing news, particularly amongst young people. Global Web Index (2017) revealed that young people spend roughly one-third of their online time on SM. Despite that, as reported by new research, 58% of young people have attempted to decrease their daily hours spent on SM compared to the previous year because of being predominated by the SM content (Ni et al., 2020). They attempt to block the flood of unorganized information on SM (Global Web Index, 2019) cause the content could damage their well-being and personal development. For instance, SMU could result in increasing bias of self-image, self-objectification, or eating troubles in youngsters (Zheng et al., 2019; Niu et al., 2019, as cited in Ni et al., 2020). Furthermore, using SM intensively could lead to negative feelings in adolescents, such as anxiety, and depression by the mediating impacts of social evaluation and confidence (Niu et al., 2018; Moreno et al., 2011, as cited in Ni et al., 2020).

The electronic media's communication functions are particularly common among adolescents. Teens heavily use new communication forms such as e-mail, prompt and text messaging, and communication-directed Internet sites like SNSs, blogs, video, and picture uploading websites like interactive video games, YouTube, and virtual reality medium, like Second Life. Questions abound about how they use these platforms. Millions of today's young adults are using SNSs. However, less is known regarding why, how much they are using these SNSs (Pempek et al., 2009). In this regard, Subrahmanyam and Greenfield, (2008) stated that there are many different forms of communication among today's youth, involving e-mail, text messaging, instant messaging, bulletin boards, blogs, chat rooms, SNSs such as Flickr, Facebook, MySpace, YouTube, multiplayer online computer games like World of Warcraft, and simulated environments like Teen Second Life.

The last few years have witnessed a blast of social networking which has appended a new social extent to the internet. There has been a swiftly growing number of internet contacts amongst groups of individuals who have joint concerns, however, they are gathered in an utter space. (Wilson et al., 2002, as cited in Gupta & Bashir, 2018). Despite the complexities that SM has entered our communication styles, SM have presented many benefits such as assisting individuals with similar interests to connect.

Also, SM has provided a faster, grassroots-level way to disseminate news. Virtual spaces such as SM changing continuously, and they are not only shaping us but also being shaped by us (Donath & Boyd, 2004). In 2010 a Global Web Index survey revealed that SM arrived at maturation and users have shifted from only being publishers and content creators to using actual time technologies to share other people's content and views (Smith, 2011, as cited in (Singh et al, 2012).

According to (Fuchs, 2015) there are two fundamental characteristics of how SM platforms such as Facebook relate to boundary liquefaction (Fuchs and Trottier 2013). *Integrated sociality*: SM allow the convergence of the three modes of sociality (cognition, communication, and cooperation) into a single form of sociality. This means that, for instance, on Facebook, a person generates multi-media content such as a video on the cognitive level, broadcasts it so that other individuals can comment (on the communicative level), and enables others to edit and remix the content, resulting in new collaborative content with multiple authorship. One stage does not always lead to the next, but technology has the ability to allow the merging of all three activities in one space. Facebook, by default, promotes the progression from one level of sociality to the next within the same social area.

Integrated social roles: Personal profiles on SM platforms like Facebook explain the numerous roles that people play in their lives. On SM platforms such as Facebook, we play a variety of roles (friends, consumers, citizens, workers, fans, colleagues, and so on), yet all these roles are described onto a single SM profile that is viewed by different persons linked with our numerous social roles (Fuchs, 2015).

2.4. Definition of Social Network Sites

Even if there is no obvious explanation for SNS as an alternative used the word SM, because of the various languages used to define them in academic circles and practice (Wolf, Sims, & Yang, 2018). SNSs, SM, and SM sites are extensively used phrases for networking and web interaction (Oestreicher-Singer & Zalmanson, 2013; Kapoor et al., 2018, as cited in Ali et al., 2020). Despite enabling users to generate profiles and comments, not all websites are SNSs. Boyd and Ellison (2007) identified SNSs in three characteristics: firstly, a user-created public or quasi-public profile. Secondly, a group of links and connections with other users in the structure. Thirdly, the capability to view

one’s list of contacts and connections, in addition to contacts created by others in the structure.

Considering the development of SNSs and the significance of these sites in mass culture it is significant to revise how to describe them. According to (Ellison and Boyd, 2013) the following description is considered more revised, accurate, and broader in describing the landscape of social networks: SNSs are networked communication outlets in which participants have exclusively identifiable profiles that include user-defined content, and content presented by others, and/or system-defined data; can publicly articulate connections that can be viewed and traversed by others; and can use, produce, and/or interact with streams of user-created content presented by their connections on the site (Ellison and Boyd, 2013).

The two phrases ‘‘social network site’’ and ‘‘social networking sites’’ are frequently used interchangeably. What makes SNSs distinctive is not that they enable people to get together with strangers, in contrast, they allow users to express and create their social networkings visible. That can lead to relationships between persons that would not have been made otherwise, but that is oftentimes not the aim, and those meetings are commonly between "hidden ties" (Haythornthwaite, 2005) who have some off-line relation. On various of the big SNSs, participants do not need to ‘‘network’’ or look to find new friends; rather, they mainly communicate with individuals who are previously a part of their expanded social network. To underline this declared social network as a crucial organizing characteristic of these sites, we name them ‘‘SNSs’’ (Boyd and Ellison, 2007).

While SNSs have applied a broad set of technical traits, their spinal column is made of visual profiles that show a declared list of friends on network sites who also are users of the structure. Profiles are special spaces where the individual can ‘‘type oneself into being’’ (Sunde´n, 2003, as cited in Boyd and Ellison, 2007). After joining SNSs, a user is requested to complete forms consisting of a sequence of queries. The profile is created utilizing the responses to these questions, which generally contain descriptions like age, interests, location, and a "about me" part. Most websites also induce users to provide a profile picture. Some sites enable users to improve their profiles by allowing them to add multimedia material or edit their appearance. Other sites, such as Facebook, enable users to append modules (‘‘Applications’’) that improve their profile.

Since their emergence, SNSs such as MySpace, Facebook, Bebo, and Cyworld have drawn the attention of huge number of users, countless of whom have merged those sites into their everyday lives. There are many SNSs with different technological affordances, backing a broad variety of practices and interests. While their basic technological characteristics are steady, the cultures that arise around SNSs are diverse. Most websites prop the preservation of pre-existent social networks, but others assist strangers to link according to common concerns, political viewpoints, or activities. Some of these sites serve varied audiences, while others entice persons according to shared languages or common religious, sexual, racial, or origin-based identities. These sites also differ in the scope to which they integrate communication means and new information for instance blogging, mobile connection, and sharing photos and videos (Boyd and Ellison, 2007).

In the last decade, online SNSs have obtained a massive amount of popularity across the world. People in general utilize SM to explain themselves and make impressions (Donath & Boyd, 2004), as well as to make and maintain connections with friends and relatives (Joinson, 2008). In this context also Pempek et al., (2009) declared that in recent times, SNSs are considered one of the main types of online applications that have rapidly grown and developed in popularity and prevalence on the Internet. SNSs, such as Friendster, Facebook, MySpace, Bebo, and LiveJournal, are member-based Internet communities that let users post profile data, such as a username and photograph, and to be in communicating with others in inventive ways like sending private or public messages or sharing picture online sites.

2.5. Social Media vs. Social Networking

It appears hard to explore SM without facing the term social networking. Thus, both concepts are reviewed and debated in this research. SM is specified by dictionary of Merriam-Webster as “forms of electronic communication (as sites for blogging and social networking) via which users generate online communities to share personal messages, ideas, information, and other materials such videos.” ("Social media", n.d.). The similar source also specified networking as “the exchange of services or information within groups, persons, or foundations; particularly: the cultivation of productive relations for business or employment” ("Networking", n.d.). Online social networking services (OSN

services) or (social media services), such as LinkedIn, Facebook, and others, are developed to assist users in sharing personal data, establishing, and sustaining social relationships, in addition having fun (Hu et al., 2015). SNSs allow people to communicate, build relationships, and share data, videos, photos, and more. These platforms revolve around connecting with people and sharing knowledge (Storm, 2020). The best way to understand the meaning of these two terms is by breaking them down into their varied meanings. According to the Dictionary.com site the phrase social relating to, focused on, or distinguished by amicable relationships or company.

Networking: a supportive framework for people and groups with similar interests to exchange services and information. While the phrase media implies a plural of medium. (commonly used with plural verbs) the tools of communicating, such as television, radio, magazines, newspapers, and the internet, which impact and reach people broadly.

Social networks and SM differ greatly from one another (Hartshorn, 2010). The first distinction may lie in the definition: social networking is an activity in which people with similar interests connect and establish connections through a community, whereas SM is still basically used to transfer or distribute information to a wide audience (Hartshorn, 2010; Cohen, 2009).

Another distinction is the way of communicating as stated by Hartshorn (2010), SM is like a channel of communication. It does not have a location you can visit it is a format that conveys a message such as radio, television, and newspaper. Simply, SM is a structure that spreads data to others. In contrast, with social networks communication is two-sided. According to the topic, atmosphere, or subject matter people get together to conjoin others who have similar backgrounds and experiences. Where discussions are at the base of social networking and via which relations are grown (Hartshorn, 2010).

According to Hartshorn (2010) the "asking or telling" aspect and "timely responses" are other differences between SM and social networking. SM requires time and a lot of labor. Individual discussions cannot be automated, and building a following takes time unless you are a well-known and well-established company. Social networking is not a sprint but a marathon. Your interactions are richer, more intentional, and more intimate when you use social networking to establish direct engagement with the people you choose to connect with. Your network increases at an exponential rate as you meet and get introduced to others. Even though people on social networks can blog or debate anything, SM does not enable users to handle comments, fix mistakes, or other data for

business or personal gains or benefits (Hartshorn, 2010; Nations, 2021; Cohen, 2009). With social networks, you can inform your fellows and peers regarding your new blog or business and talk with them about how to drive it a success. The conversations that you generate can make a lot of people loyal fans, therefore it's worth investing time (Hartshorn, 2010).

SM can be termed an outlet and a strategy to broadcast, while a Social Network is an instrument and a utility to connect with others. Basically, you can combine both phrases beneath the cover of Web 2.0. (Stelzner, 2009; Cohen, 2009). Cohen (2009) also stated that the distinction is not only in connotations but also in the characteristics and roles embedded into these sites by their creators which prescribes the manner they are to be utilized.

2.6. Types of Social Media

According to a blog specializing in SM called Traffikd (2009), currently, there are more than 400 SM sites excluding blogs. These sites have been categorized as follows: arts, contacting with friends, cars, books, cooking and food, dating, cultures, and foreign languages, education, event planning, fashion, family, finance, common networking, games, health and medical, Internet marketing, consumer reviews, kids, microblogging, news, movies, photo sharing, video sharing, pets, politics, professional, real estate, pop culture, shopping, religious, sports, social action, travel, technology, women, teen and miscellaneous (Traffikd, 2009 as cited in Wright and Hinson, 2009). Though X (formerly Twitter) or Facebook might first leap to mind, the SM world contains plenty of mobile-based and web technologies arraying from picture and video-uploading websites to reviewing and rating forums (Fraustino et al., 2012). Storm (2020) classified SM into five categories namely, social networks, social blogging networks, media sharing networks, discussion networks, and review networks.

1. Social Networking

Social networks are one of the most famous types of SM. It enables users to contact individuals and brands online. Social networks also can assist in building brand perception generating new leads, building relations with customers providing customer service, etc. The most public examples of social networks are Facebook, X (formerly Twitter), and LinkedIn.

2. Media sharing networking

These sites generally concentrate on sharing visual content like pictures and videos. While social websites such as X (formerly Twitter) and Facebook allow users to deliver photos, they are not deemed media-sharing networks. Because it focuses only on sharing pictures. The most famous examples of media-sharing networking sites are Instagram, Pinterest, and YouTube.

3. Social blogging networks

They enable users to broadcast content to the public and assist them in discovering it. This kind of SM is an excellent way to form engagement. Social blogging network sites are one of the more distinctive kinds of SM as they demand creating continual content to share and need more effort than other SNSs. The most common examples of social blogging networks are Tumblr and Medium.

4. Discussion networks

They are another specified kind of SM site. The focus of these social sites is debating opinions, news, and information. Users see threads of content and engage with them to review what do people comment or state. These networks are a good way to conduct market research. Discussion networks offer opportunities to acquire a lot regarding the public by observing what they state about your brand on these types of sites. Even though you have an unfamiliar brand, still you can review what they talk about on various subjects in the sector. That leads to obtaining a better comprehension of how customers sense products or businesses. Many persons tend to use these sites to answer or to observe if people have related problems. Reddit and Quora are considered the most common discussion networking platforms.

5. Review networks

These sites enable people to review, locate, and share information regarding products and brands. When there are decent reviews, these sites can convey positive social evidence to their business and its demands. When looking at reviews, you can recognize how people realize your brands. It is a great manner for you to grasp their opinions and expand their experience. The most famous review networking sites are Yelp and Glassdoor.

2.6.1. Facebook

It is a social network service that was created in 2004 and is privately owned and controlled by Facebook, Inc. It was established by Mark Zuckerberg and others while he was a student at the University of Harvard; though, when the site first opened, it was solely available to students of Harvard. Later, the privilege was expanded to cover the students of secondary school, and then to everybody aged 13 and up (Boyd, 2007). It enables users to generate a personal profile, make friends with other users, and interchange messages, inclusive of automated warnings, comments, and pictures when they make updates to their profile. Furthermore, it enables users to join user groups of common interests that are prepared by school, college, workplace, or other features. It allows anybody who is 13 years old and older to register and become a user of the website (Edosomwan et al., 2011).

With more than 2.3 billion monthly actual users, it is one of the most famous SNSs. Many people utilize these sites to be in contact with friends, family, and brands. It allows users to provide status updates, videos, photos, links to content, and polls. (Storm, 2020). According to Lenhart (2015), it is one of the top widespread SNSs amongst (13–17 years old) teenagers in the United States of America. Also, 71% of adolescent SM users have more than one SM and 24% of teenagers are “almost always” online because of the popularity and prevalent usage of smartphones.

2.6.2. X (formerly Twitter)

In 2006 X (formerly Twitter) came into existence while Facebook commenced opening its gates to everybody. X (formerly Twitter) obtained considerable fame firstly as it provided more distinct choices for instance micro-blogging. Secondly, it has been utilized by some celebs (Tweeternet.com, 2010; Jasra, 2010, as cited in Edosomwan et al., 2011). It has more than 326 million actual monthly users. It is used in a similar way to Facebook, where users can post videos, photos, status updates, polls, links, and others (Storm, 2020).

X (formerly Twitter) has begun as an SMS text-based service platform. This restricted the original Tweet length to 140 characters. With the development of X (formerly Twitter) over the years, the maximum Tweet length increased to 280 characters, still brief and short, but allowing more expression (" X (formerly Twitter)", n.d.). X (formerly Twitter) is a social network and microblogging service that lets you answer the

question "What are you doing?" by sending text messages known as "tweets" to your friends, or "followers." ("X (Twitter)", n.d.). X (formerly Twitter) is an Internet social network and microblogging site that combines interpersonal and mass communication features, allowing users to share messages known as tweets with others known as followers (Chen, 2011).

2.6.3. YouTube

YouTube was established in 2005, in California and it uses the technology of Adobe Flash Video to present a varied range of user-created video material, which includes TV clips, music videos, and movie clips, in addition to unprofessional material like short unique videos and video blogging. It is the most famed online video society globally, where masses of individuals can find out, watch, and upload originally produced videos. It offers a platform for individuals to be connected, informed, and inspired by others globally. It serves as a main supply stage for creative material makers and advertisers, small and large (Edosomwan et al., 2011).

YouTube has more than 1.8 billion registered users monthly. Also, it is considered the second-highest search tool worldwide. Individuals enthusiastically search for videos and view them on this site. This media-sharing network is a unique opportunity for users to engage people through videos because it enables users to make and share videos everywhere (Storm, 2020).

2.6.4. Instagram

Instagram commenced in 2010, it has become a basic prop for teenage users of SNSs (Lenhart, 2015). It is a wonderful place for sharing videos and photos. This kind of SNSs enable users to share inspiring and creative images and videos (Storm, 2020). According to Datareportal (2023), Instagram will have at least 1.628 billion users worldwide by April 2023.

2.6.5. Pinterest

It has about 250 million monthly actual users who utilize this graphic-oriented website. This SNSs primarily concentrates on photo pinning. Pinterest allows users to pin these photographs to their boards, which they can then refer to later. This content-sharing

network is outstanding for exchanging innovative notions. It allows users to exchange photos with links to blog topics, recipes, and more. (Storm, 2020).

2.6.6. Snapchat

Snapchat is another new application that concentrates on sharing videos and photographs. Teenagers have adopted this app in the last two and a half years. According to Lenhart (2015), two out of five American teenagers (41%) utilize Snapchat for sharing videos and images which automatically are removed later within a preset period normally a few seconds (Lenhart, 2015). According to DataReportal (2023), Snapchat had 383 million daily active users globally in April 2023.

2.6.7. LinkedIn

It has over 610 million users in over 200 million territories and countries. It is an excellent space for professionals to contact with each other's. Also, it's a great platform for creating professional relations, finding new jobs, sharing information, and employing new candidates (Storm, 2020).

2.7. Social Media Use

Social networks as tools of communication are growing rapidly, mostly with the steady expansion of applications for mobile devices. Particularly young adults have become accustomed to sharing their daily lives and knowledge, remaining in contact with friends, family, and teachers online, and discussing their concerns and interests (Morahan-Martin & Schumacher 2003; Leung 2002, as cited in Gupta & Bashir, 2018).

Regarding teens' use of SM and technology Lenhart (2015) stated that teenagers are zealous users of SNSs and apps. The majority of American teenagers (about 71%) reported that they utilize multiple SNSs out of the seven websites they were asked about (namely Facebook, Instagram, Snapchat, X, Google+, Vine, and Tumblr). As stated by the International Association of Business Communicators, over 50% of all Internet users have engaged in SNSs. SNSs became the top platform for generating and sharing material, also about (75%) of all Internet users have reviewed a blog (Young, 2009 as cited in Wright, and Hinson 2009).

Over the last ten years, the prevalent usage of SNSs (Duggan et al., 2015) led to the emergence of empirical investigations and academic publications that supported the constantly growing phenomena of SNSs (Panek, Nardis, & Konrath, 2013; Ellison, Steinfield, & Lampe, 2007; Olufadi, 2015 as cited in Ali et al., 2020). Also, some studies examined the impact of personality characteristics and gender on the person's SMU (Asterhan & Bouton, 2017; Alkaabi, Albion, & Redmond, 2017;). They disclosed that females tended to use SM for academic needs more than males. Some considerable gender distinctions have appeared in the literature regarding the education field that found the usage of SM to sustain relationships is more prevalent among female than male university students (Krasnova et al., 2017), male students were reported adopting SM more for information motivations (Kim et al., 2014).

With the growth of technology, a huge amount of information became accessible to the public via a broad variety of avenues. Users can approach information not only via traditional, and printed sources but also via electronic sources in several structures over the Internet. Research proves that users, particularly undergraduates, rely frequently on open resources offered on the Web (Gardner & Eng, 2005; Holliday & Li, 2004 as cited in Kim et al., 2011). In recent years, SM with user-generated material (for example, YouTube, blogs, Wikipedia) has grown in popularity as a source of information, even though the trustiness of such sources is frequently questioned and hard to evaluate. Grasping what types of SM are used repeatedly as sources of information, and how and why users assess the information quality from such sources is significant because it could assist in specifying the challenges faced by users when choosing unconventional social sources to utilize, as well as present instructions for the assessment of sources (Kim et al., 2011).

Recently, SM have turned into being a part of everyday life. In the past 5-10 years, SMU especially SNSs has enlarged to nearly all aspects of life: private people, companies, and public institutions (Sørensen et al., 2014). Both teenagers and adults' usage of SNSs has increased significantly (Lenhart et al., 2010).

Many SNSs such as Facebook, X, Google Plus, and LinkedIn, have used dynamic societal frameworks in which online societies can be created and easily sustained by facilitating communication and social interaction amongst users. Such networking chances assist in making societies, groups, and people with common interests stay more connected (Gupta & Bashir, 2018). Online SNSs provide a bunch of web societally

focused services (like tools for creating profiles, posting on walls, texting, sharing, and blogging) through technology-empowered platforms to assist in the creating and exchanging of user-created content to present worth in satisfying social desires of users (Hu et al., 2015).

Nowadays, SMU is one of the top prevalent leisure activities amongst teenagers. Youngsters are among the top productive users of SNSs (Lenhart, 2015, Ahn, 2011). SNSs such as Snapchat, Instagram, Facebook, etc. host simulated societies that enable users to generate public and/or private profiles (Kuss and Griffiths, 2011). Users can enter SM sites from varied platforms (e.g., computer devices or mobile phones), to do various activities such as communicating with real-world friends, meeting with other people according to mutual interests, mailing, chatting, sharing, or creating images and videos, dating, blogging, playing games, etc. (Allen et al., 2014, Griffiths, 2015).

Regarding SMU by socioeconomic status, Lenhart (2015) stated that Snapchat is more likely to be used by wealthier teenagers, while Facebook is most widely used among lower-income teens. Youths from more wealthy households are comparatively more likely to visit Snapchat more frequently than those from the lowest wealthy homes. X (formerly Twitter) also shows the same form by income, with the richest teenagers using X (formerly Twitter) more than their low-income peers. It must be observed that some of these distinctions might be the results of distinctions in the usage of these SNSs by these various subgroups of teenagers.

According to the findings of Lenhart's survey on the teens' use of technology, there is a noteworthy gender difference among teenagers in web and gaming behaviors. Girls are outstripping boys in the usage of text messaging, and in the usage of visual SNSs such as Snapchat, Instagram, online pinboards (such as Polyvore and Pinterest), and Vine and Tumblr, while boys are mastering video game playing and console access (Lenhart, 2015). It is obvious that the usage of Facebook, X, LinkedIn, and MySpace is not similar throughout the world, and there are great distinctions relating to preference cross-region for these SNSs (Singh, et al., 2012).

The media richness theory describes the criteria for choosing technological media based on their richness of information, clarifies that the efficiency of communication is determined by the extent to which the means are utilized, and concentrates on interactive forms of two-sided communication between the communicator and the audience who receive the message. According to the theory, the richer the media that offers feedback,

the less ambiguity, and the more effective communication will occur; the richness of information minimizes the ambiguity degree and generates an area of common meanings utilizing a certain communication method. (Bailey et al., 2007 as cited in Alfirm, 2014).

A technology writer and former editor of Windows magazine Mike Elgan (2009) states that SNSs have displaced television as the primary news source for Americans. Since its first emergence SNSs have become progressively popular every year (Elgan, 2009, as cited in Wright, and Hinson 2009). In this regard Besancon (2023) also argued that SM rose to prominence, breaking down barriers in communication, sports, events, and news. Pew Research Center reported that 30% of grown persons acquire their news from Facebook feeds. Recently, anyone can be an "immediate" news breaker (Besancon, 2023).

2.8. Social Media Role During Crisis

With the evolution of information and technology, digital media plays a crucial role in periods of crisis, especially when using visual data to spread information and SM to enhance awareness about crises (Bao et al., 2020). Although the role of SM is getting increasing attention during times of crisis, less is known regarding the techniques by which SMU impacts hazard detection and preventive behaviors in times of such crisis (Mahmood et al., 2021).

SM platforms played a great role during the crisis in educating people about the crisis. Even though digital media has made significant efforts against the crisis, it still confronts some challenges. First, misinformation is a serious problem. False news, rumors, and intentional disinformation have been disseminated on SM platforms, causing mistrust (Bao, et al., 2020). Beneficial corrective measures such as more consistent information that gives alternate interpretations to misinformation and appeals to credibility must be continually, frequently, and widely disseminated (Walter and Murphey 2018, as cited in Bao, et al., 2020). Second, there is a shortage of formalized instructions to guide the usage of digital media in a wide-scale crisis. SM has played a significant role during periods of crisis (Gottlieb and Dyer, 2020). Indeed, the usage of SM among the community has been proven previously to increase meaningfully in the case of crisis and natural catastrophes (Niles et al., 2019) Still, it is significant to deem the profits and boundaries of this mean (Gottlieb and Dyer, 2020).

There are many considerable benefits of SM during nationwide crisis times. Firstly, SM could be used to ease the delivery of new information to providers on the frontlines. SM is also confirmed to be an efficient means for the translation of knowledge by reducing the period from publication to spreading and utilization of information (Chan, 2020, as cited in Gottlieb and Dyer, 2020). Providers must keep pace with the evidence, especially during times when information changes rapidly and SM can facilitate them to keep up to date with that. The shortened translation time of knowledge given by SM allows information providers to examine and discuss the literature in actual time, handling the inner and exterior validity of the results (Gottlieb and Dyer, 2020).

During times of crisis and disasters, people are more active online, gradually using SM for the currentest information. For instance, afterward the Japanese tsunami in 2011, there were over 5,500 tweets by second related to the catastrophe. However, SM are utilized beyond sharing or seeking information during catastrophe; people growingly expect crisis administrators to observe and reply to their posts on SM (Crisis Communication Management, 2012 as cited in Fraustino et al., 2012). Also, in the context of crises, McLean & Power (2013) stated that during crises, SM users tend to consider SM as a trustworthy and dependable source to obtain information.

The war in Ukraine and the Middle East demonstrates how anybody can turn out to be an effective media tool and whereby "break news". X (formerly Twitter) is the electronic nervous system for the latest news throughout the world. SM has reduced the world, and everything that occurs is posted instantly via tweets, feeds, and photos as it occurs. Marshall McLuhan predictively termed electronic media as a “global village” years before the emergence of X (formerly Twitter) and other SNSs which became a vital part of the social structure nowadays. When the Arab Spring broke out in Egypt in 2010, it was labeled the “X Revolution” (Besancon, 2023).

According to Mano (2020), SM have influenced many individuals' everyday lives for several years. Now it has become a main way for connecting and networking because of the difficulty of communication during crisis times. The crisis has put people in a new reality in which people confront with circumstances of social and financial uncertainty and they ought to protect and be protected from the consequences of the new approach of dealing with life and its ordeals. People also encountered a significant loss of economic and social resources. Where the technology role comes into view by providing opportunities to connect, access, produce, and disseminate new information. Thus, it

allows people to use the needed tools and resources they need to overcome troubles (Lee et al., 2012).

The online network sites assist people in keeping sense and enable them to declare their views that otherwise would have been bounded by space or time restrictions. Also, in many circumstances, online network sites can provide resources and information that people need to deal with the sensed risk. However, to a certain range or other, individuals did not take into consideration the significance of the framework of online connectedness arising from the differences in SMU and socioeconomic dissimilarities (Mano, 2020).

Besancon (2023) stated that SM has become greater than just a social outlet. It can be a sequence of tragedies or events streaming straight to the world while we view it on our tablets and phones. It is beyond a communication medium or sharing tool for daily life events with your "friends and followers". It became an automatic extension of everybody's nervous system, which engages us in other's lives deeply.

2.9. Reasons for Using Social Media

SM such as Instagram, Facebook, YouTube, LinkedIn, X, and so on, are developed based on creating and exchanging user-created content and provide users with a large range of services and applications to address people's social needs for information sharing, relationship development, and fun (Hu et al., 2015). Fraustino et al. (2012), indicated that there are several motives for the public usage of SM during crises and catastrophes:

- For convenience.
- For social norms.
- For personal references.
- Humor & levity.
- Seeking information.
- Updated information.
- Unfiltered information.
- Determining disaster magnitude.
- Checking in friends & family.
- Self-conscious.
- Sustain community feeling.
- Seeking moral support and healing.

Contrarily, research indicated that the main reasons for public may not utilize SM to communicate during crises and disasters are fears about security and privacy, accuracy worries, accessing issues, and deficiencies in knowledge.

Brandtzæg and Heim (2009) state that the crucial motivation for participating in SNSs is to make, sustain, and boost social associations. The most significant cause was to communicate with new individuals. Online social networking services present a bigger group of probably exciting interactions and a societal feeling of belongingness and interdependency. In a general sense, there is a need for an effort to update contact info continually, so relations do not finish as time passes and online social networking services assist in managing continuously increasing counts of contacts. Users have continual accessibility to logical contact info, with profiles serving as informative and effective address books. They also get pleasure from using online social networking service to share photos and music assume different or new identities and get involved in a simulated world of entertainment. For instance, Facebook's game facilities permit omnipresent playing, e.g., FarmVille, services of gift enable giving gifts with stuffed toys or virtual balloons. Google+'s community facilities enable artists to hold minor musical shows in Hangouts, and LinkedIn's job linkage services enable users to utilize their social networks to find jobs swiftly. (Hu et al., 2015).

SNSs are an integral part of daily life: confidentially, we stay informed about the whereabouts of family members and friends; at work, we utilize SNSs to keep us updated about news, to meet with specialists to ask them, or to find accurate jobs to apply for; public foundations send warnings through the SM to warn about catastrophes. Although the introduction of SM now is dated many years back, constant signs of progress are observed in practicalities, fields of usage, and even novel social network services come into view (Sørensen et al, 2014).

2.10. Demographic Determinants of Information Seeking

Data collected from a haphazard telephone questionnaire by Avery (2010) showed that age notably affected the selection of channels for crisis information. Various age groups used various outlets of crisis information, such as health service departments, radio, the Internet, family, and friends; intriguingly, departments of health care were the leading source of information for young persons, whereas the Internet was the major

source for those who aged between (18 and 24 years), though it was relatively insignificant for the crisis than usual information.

Years of research have demonstrated how crucial it is to adjust message strategy by the type of crisis, therefore it stands to reason that different crisis types necessitate various message and media usage policies. Avery (2010) details the forms of media consumption among audiences based on involvement and demographics as well as variations in favorite outlets for getting information about health between normal and crises. The use of media channels during crisis time is considered a relatively undeveloped area of research regarding crisis communication. Profound knowledge of where and how individuals look for information during crises is critical for developing a successful crisis messages policy, and comprehending how the crisis information source impacts motives to follow crisis directions to audiences can further notify crisis administration. Mercy (2021) conducted a study on the adoption of SM amongst students, the research findings stated gender has significant effects on people's reasons for accepting new technologies. As male students are inclined to use Facebook, X, and WhatsApp, more than female students. In contrast, females tended to use Snapchat, TikTok, YouTube, and Instagram, at a higher percentage than males. The students' genders influenced SM adoption since the findings disclosed substantial distinctions between students' genders in the recognized need for the adoption of SM.

Park and Avery (2018) conducted a study on how audiences utilize media during emergency alerts, and they found that people utilize various media to look for information during various kinds of crises. Demographically, age forecasts demographic preferences for information outlets during crises and crisis types, and age also impacts the relation between media preference and the intention to follow suggested behaviors. The results' practical and notional implications are debated as well.

2.11. The Global State of Digital in 2024

Internet usage and the popularity of social websites have been documented in many recent reports, such as the Digital 2024 January Global Statshot Report, which offers a detailed picture of Internet use and the most prevalent networking sites in the world, especially in Sudan. As revealed in the Digital 2024 January Global Statshot Report, the number of internet users has increased by 1.8 percent in the last year, reaching

5.35 billion in January 2024. This amount represents 66.2 percent of the world's population. The report also showed that there are 5.61 billion unique mobile users worldwide as of January 2024, accounting for 69.4% of the world's population. Over the previous year, the number of people using mobile phones increased by 2.5%, adding 138 million additional users.

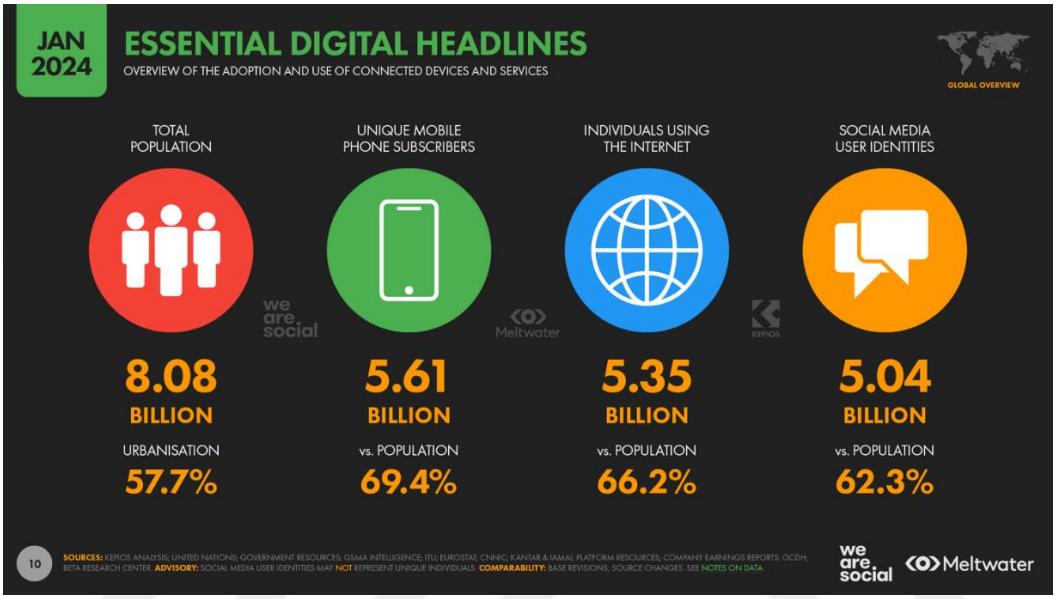

Figure 2.1. *The global state of digital in 2024* (https://datareportal.com/reports/digital-2024-global-overview-report)

Despite today's expressive figure, more than 2.7 billion individuals throughout the world remain offline in January 2024. Over 94% of Northern Americans and Northern and Western Europeans already have an internet connection, in other promising news, the most recent figures reveal that internet penetration now ex ceeds 25% in all parts of the world, except Central Africa, where adoption rates remain below 50%.

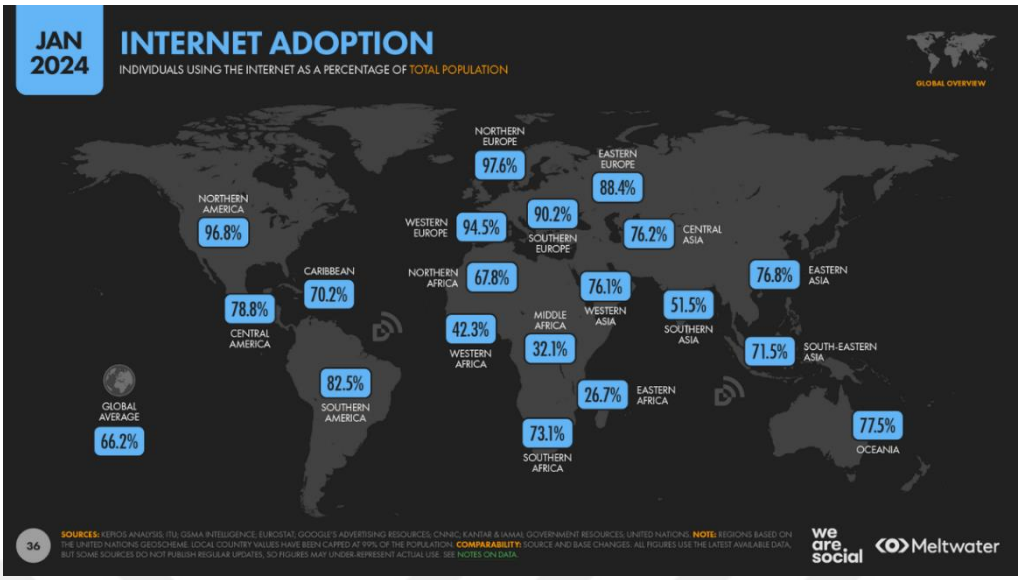

Figure 2.2. *Internet adoption around the world* (https://datareportal.com/reports/digital-2024-global-overview-report)

2.11.1. Sudan's Population 2024

As stated in the Digital 2024 Sudan Report in January 2024 the Sudan population stood at 48.73 million. According to report data, the population of Sudan elevated by 1.2 million (+2.6%) between the beginning of 2023 and the beginning of 2024. 50.0% of Sudan's population is female, while 50.0% is male. 36.6% of the population lives in urban centers, while 63.4% lives in rural areas.

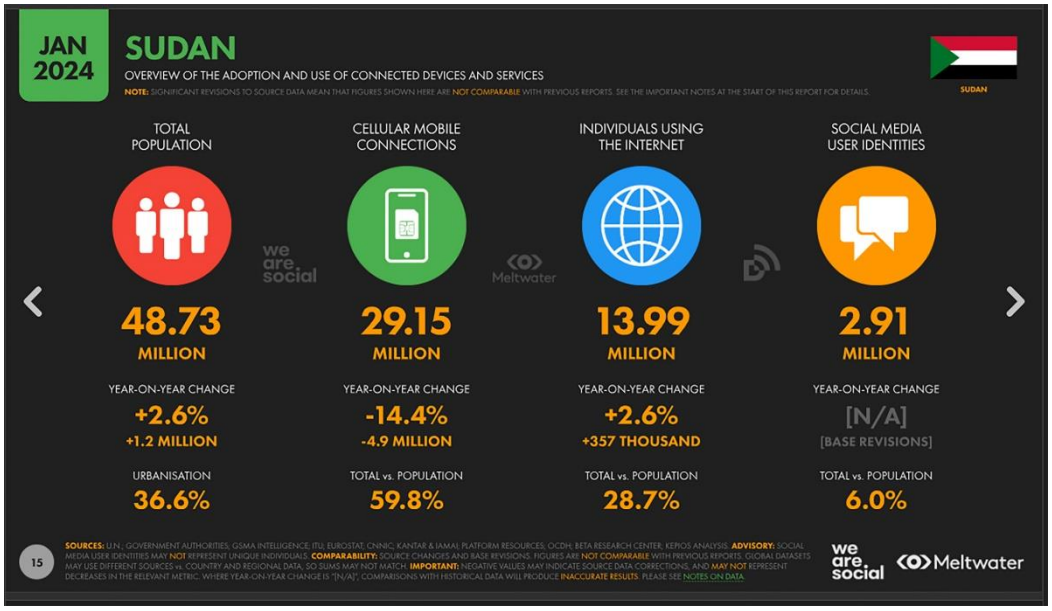

Figure 2.3. *Sudan's Population (*https://datareportal.com/reports/digital-2024-sudan)

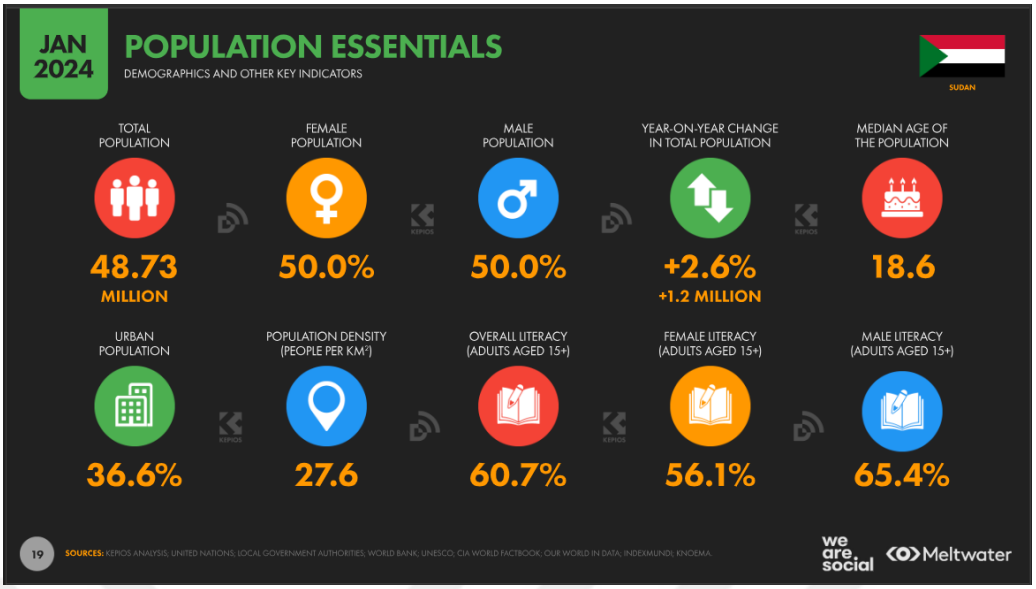

Figure 2.4. *Sudan's Population Essentials (*https://datareportal.com/reports/digital-2024-sudan)

2.11.2. Internet use in Sudan in 2024

Based on the report by DataReportal there were 13.99 million users of the Internet in Sudan in January 2024. Sudan's internet penetration ratio was 28.7% in January 2024. Kepios data shows that Sudan's internet users grew by 357 thousand (+2.6%) between January 2023 and January 2024. To put things in view, these user statistics show that 34.74 million Sudanese did not utilize the internet at all at the beginning of 2024, indicating that 71.3% of the country's population was offline at the time.

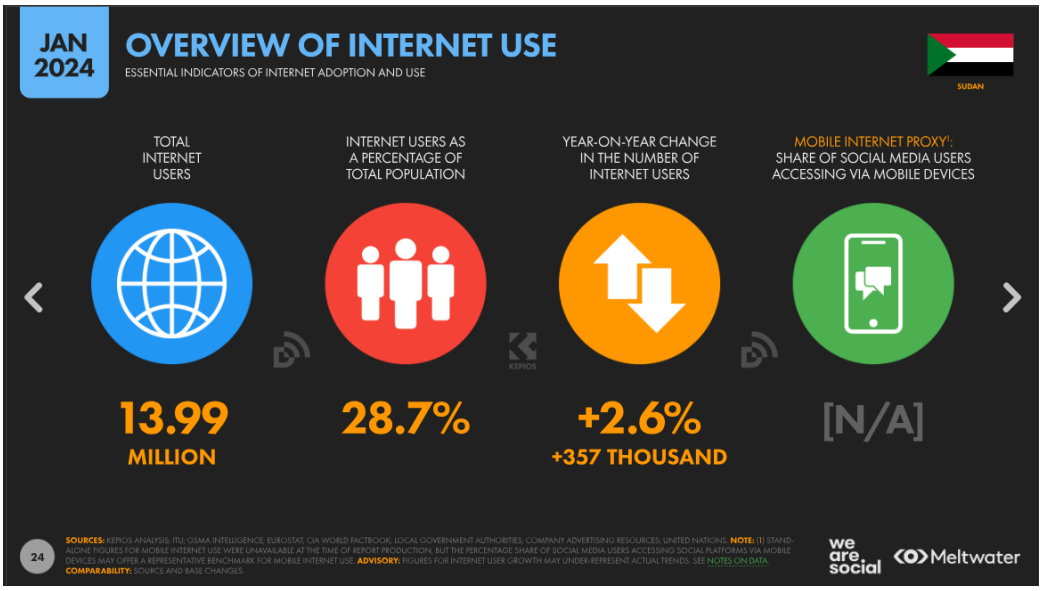

Figure 2.5. *Internet users in Sudan2024 (*https://datareportal.com/reports/digital-2024-sudan)

2.11.3. Share of Web Traffic by Device in Sudan in 2024

In January 2024 DataReportal stated that 91.39% of internet users in Sudan access the internet using mobile phones. While 7.82% of them access the internet using laptop and desktop computers, and 0.78% of web traffic comes from tablet devices.

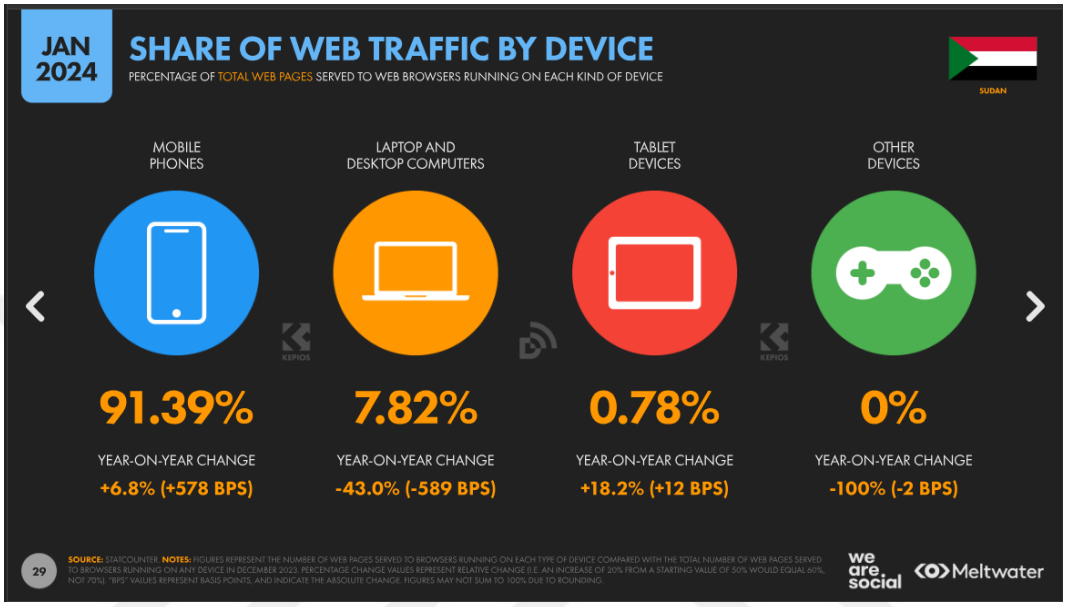

Figure 2.6. *Share of Web Traffic by Device in Sudan in 2024* (https://datareportal.com/reports/digital-2024-sudan)

2.11.4. Mobile Connectivity in Sudan in 2024

As reported by figures from GSMA Intelligence at the beginning of 2024. There were 29.15 million mobile connections in Sudan. Given that many individuals throughout the world utilize multiple mobile connections - for instance, they may have one for private usage and another for business - it is not uncommon for mobile connection counts to outnumber the overall population number significantly. GSMA Intelligence's figures demonstrate that Sudan's mobile connections were equal to 59.8% of the total population in early 2024. The figures for Sudan's mobile connections were reduced by 4.9 million (-14.4%) between the beginning of 2023 and the beginning of 2024.

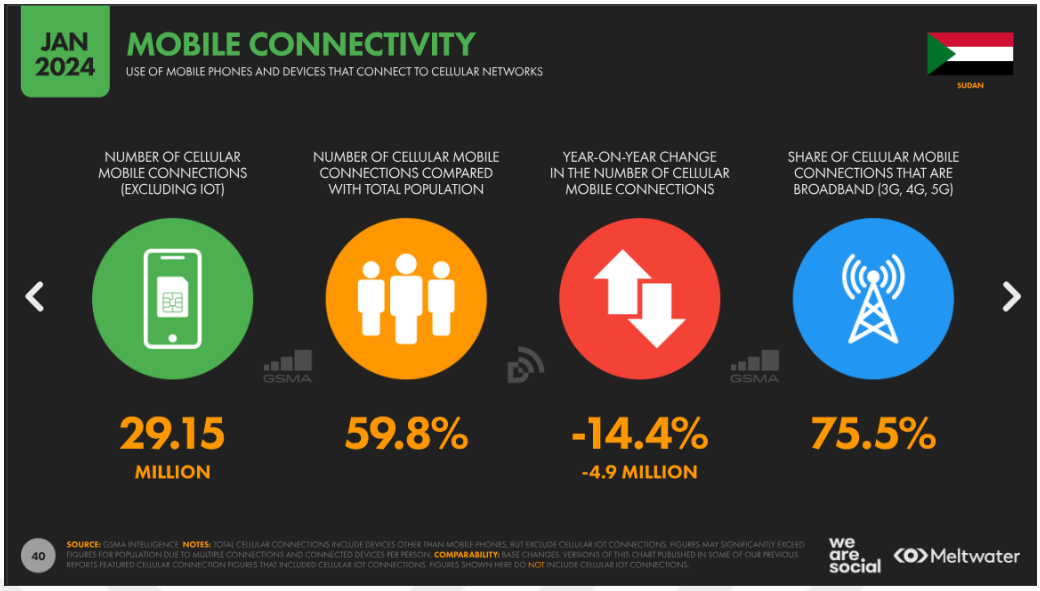

Figure 2.7. *Mobile Connectivity 2024 (*https://datareportal.com/reports/digital-2024-sudan)

2.11.5. Sudan's Social Media Statistics in 2024

According to DataReportal's figures, Sudan has 2.91 million actual SM user identities in January 2024. At the start of 2024, the figure of SM users in Sudan accounted for 6.0% of the entire population; however, it is vital to emphasize that users of SM may not exemplify unique persons. At the same time, figures provided in the ad planning tools of prominent SNSs show that there were 2.91 million people aged 18 and up utilizing SM platforms in Sudan at the beginning of 2024, accounting for 11.3% of the overall people aged 18 and up at that time. More generally, 20.8% of Sudan's total users of the internet base (regardless of their ages) utilized a minimum of one SNS in early 2024. At the time, 75.4% of Sudan's SM users were male, while 24.6% were female.

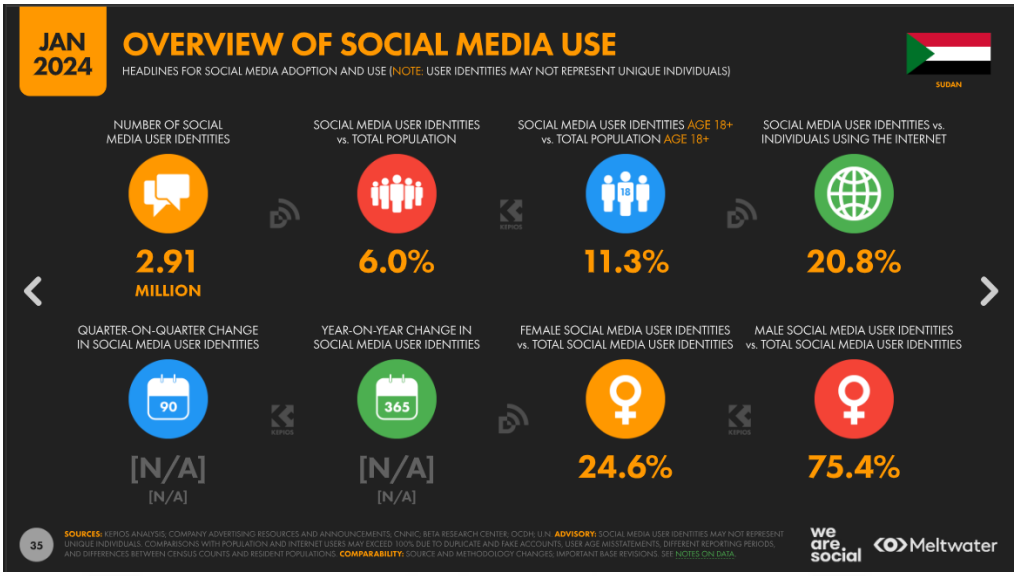

Figure 2.8. *Social Media Use 2024 (*https://datareportal.com/reports/digital-2024-sudan)

2.11.6. Web Traffic Referrals from Social Media 2024

Figures from Datareportal published in early 2024 showed that Facebook attracts roughly 62% of Sudan's users of SNSs, X (formerly Twitter) website attracts 27.7%, and Youtube drives 7.4% of users of SNSs. Instagram attracts 1.4% of SNSs users, while LinkedIn attracts 1.1%.

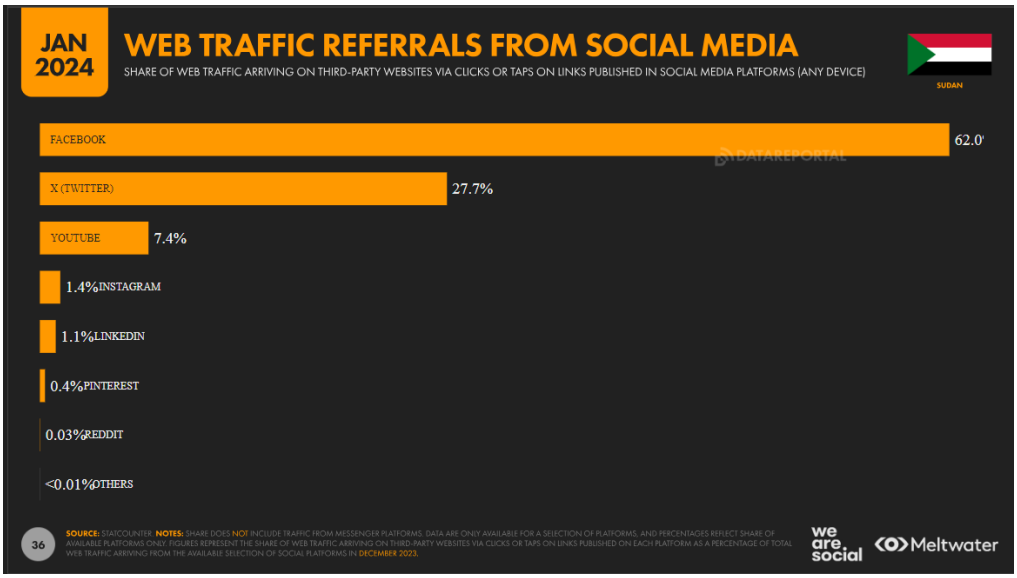

Figure 2.9. *Web traffic referrals from social media 2024 (*https://datareportal.com/reports/digital-2024- sudan)

2.11.7. Sudan’s TikTok Users in 2024

According to figures available in ByteDance’s advertising resources, there were 2.91 million TikTok users aged 18 and older in Sudan at the start of 2024. Considering that ByteDance enables marketers to target TikTok’s ads to users aged 13 years and up through its promotion means, however, these means present only audience information for users aged 18 and up. In this perspective, ByteDance’s statistics demonstrate that TikTok’s ads achieved 11.3% of all grown persons aged 18 years and older in Sudan in early 2024. Meantime, TikTok’s ads access in Sudan was equal to 20.8% of the regional users of the internet base at the start of the year, irrespective of age. At the beginning of 2024, 75.4% of TikTok’s ads viewers in Sudan were male, while 24.6% were female.

2.12. Research on Social Networking and Social Media

The SNS is one of the recent popular SM platforms. So far, few numbers of former studies have investigated empirically the motivations of people for using SNSs, particularly those not outside the United States (Brandtzæg and Heim, 2009). Given the growingly significant role played by SM in facilitating information spreading during times of crises and disasters (Fraustino et al., 2012), it is essential to understand the insights revealed by research and studies regarding this procedure. The following literature presents information about the students' usage of SM, both in general and during crisis time, and focuses on what urges the students and encourages them to utilize SM during crises, and what discourages them from consumption. Differences in the traits of online platforms may generate distinctions in results because some outlets focus on written communication (e.g., Tumblr, X) are demonstrated to influence resilience negatively, while other outlets based on photo-sharing (such as Instagram) were rather positively linked to variables of positive mental health (Zakour, 2019 as cited in Mano, 2020).

Much research foretells different traits of users’ behavior in the setting SMU (such as Rosenberg, 2019; Wang et al., 2012; Wixom and Todd, 2005) and determine that SM become prevalent because it can satisfy users’ different desires regarding social connections through the viewpoint of the U&GT (Katz et al., 1973). For instance, Brailovskaia and Margraf (2016) stated that when comparing users of Facebook with non-users results indicated that users of Facebook scored significantly higher on self-respect,

narcissism, and extraversion than non-users of Facebook. Moreover, Facebook users scored substantially greater life satisfaction values, subjective happiness, and societal support. Non-users of Facebook exhibited notably greater sadness symptoms than users of Facebook. However, other studies point out how usage of SM might lessen in-person social contact, which in turn lowers welfare and emotional health (Hall et al., 2019; Berryman et al., 2018). Nevertheless, important distinctions between users and non-users of Facebook related to some connections between personality characteristics and behavioral health variables. In comparison to non-users of Facebook, the findings reveal that users of Facebook had greater values of specific personality characteristics and positive variables protecting behavioral health. These results are of specific concern considering the great importance of social online outlets in the everyday lives of many individuals (Brailovskaia and Margraf, 2016).

SM research has addressed from a variety of angles, using a range of concepts and ideas, such as SNSs (Boyd & Ellison, 2008), the SMU by college students, and how it affects their welfare during health crises (Pressly, 2021), SM exposure during the health crisis (Rivas et al., 2021), the assessment of students' SMU (Chege and Nicholas, 2018), the relation between usage of SM and anxiety amongst university students during a health crisis (Jiang, 2021), SMU, personal efficacy, potential danger, and preventive behavior during times of health crises (Mahmood et al., 2021), and the relation between SMU during health crises and college students' emotional and social well-being (Tuck, Thompson, 2021).

Brandtzæg and Heim (2009), studied why people use SNSs by combining widespread qualitative and quantitative research approaches in Norway, they asked 1,200 users of SNSs an open question about their motives for using SNSs. The findings found that individuals frequently reported many motivating reasons to use SNSs such as being connected with new individuals, keeping in contact with friends, socializing generally, and various reasons and other sub-reasons as; accessing information related to literature, fashion, cultural events, music, current activities in their neighbourhoods and accessing new and sharing knowledge about views of people regarding everything from politics to more uninteresting matters, also they use SNSs for debating and discussions, access to free SMS (short messaging service), consuming and sharing content, and time-passing (pictures and videos), unidentified fun, browsing profile (to surf profiles of other users for information updates), family, and other motivations including reasons for utilizing

SNSs range from using them to learn about other users and cultures to more purpose-oriented pursuits like advertising their businesses. For instance, artists, musicians, and photographers exhibit and boost their works. All of that offers perception into personal motives that push individuals to use SNSs and that in turn leads to assist in comprehending of how to evolve successful SNSs. Minorita & Glenn (2019) studied SMU among university students, their findings showed that most of the students (99.5%) used SNSs, and the first popular three SNSs were WhatsApp, Facebook, and Instagram respectively. The students affirmed that they used these sites basically to gratify needs such as communication (90.9%), contacting friends (86.6%), and entertaining needs (73.1%).

Kim et al. (2011) carried out a survey study to examine SM as an information source by applying a questionnaire on undergraduates' use of SM and evaluation behavior. The study results disclosed that Wikipedia, SNSs (such as Facebook), and web user reviews were amid those used commonly to find information. YouTube, Wikipedia, and Q&A websites were utilized in both daily life and academic frameworks namely seeking information related to courses. The results also found that policies for assessing information reliability differ according to the source of information (for instance: for Wikipedia, usually checking the quantity/quality of links/references given; for Q&A websites and YouTube, checking reactions of others).

According to the survey results conducted by Mastrodicasa and Kepic (2005) 85% of students at a big study university had profiles on Facebook, the top common SNS. These data are in line with more recent statistics on the usage of SNSs and strengthen the fact that social networking is a significant part of college students' lives (Matney & Borland 2009; Jones & Fox 2009).

Fernandes et al., (2020) examined the impact of the health crisis on internet use and escapism in adolescents (teenagers from numerous states e.g., Malaysia, Mexico, India, and the UK) they uncovered that the usage of SNSs and streaming services increased by teenagers generally. Also, adolescents who showed high scores on gaming addiction, SMU, and compulsive internet use showed high grades of loneliness, depression, inadequate sleep, escapism, and anxiety regarding the crisis.

Users of SM might have various views and motives relating to the best approach to meet their online demands. While people are conscious that participation in SM increases their ability to raise social ties and resilience, they might still choose not to do

so. Thus, they require a more thorough examination of the users' profiles and need to evaluate whether the virtual environment is the ideal approach to track a sense of enablement and stability that will assist them in dealing with the ordeals of the health crisis and raising their resilience (Mano, 2020).

2.13. Research Regarding Social Media Usage in Sudan

The annual report of SM in Sudan which was presented by the Sudanese Bloggers Network stated that the year 2015 witnessed a breakthrough on the Internet in Sudan, where in February 2015 the US removed the technical sanctions which had been placed on Sudan for 18 years, as it banned the Sudanese from using many important websites and applications such as the Google Play, App Store, Microsoft applications, Adobe programs, and Coursera site, in addition to many software and educational websites. These amendments approved by the US government gave Sudanese students, businessmen, journalists, civil society leaders, and others the best communication tools they need to study, create businesses, and prosperity, and serve their communities. Subsequently, the Sudanese community is now able to interact extensively on the Internet (Sudanese Bloggers Network, 2016).

Aldaw (2017) studied the role of SM in the youth's cultural changes by conducting historical and survey research. Aldaw’s study focused on SM and its role in the civilization changes of Sudanese youth based on the present status of the society through its use and employment of modern technology and means. The researcher has studied the status of the Sudanese youth to trace the size of their dealing with such media and the extent of media influence on youth, as well as the media’s effect on the formation and behavior of the whole society. Such influence, through the global tools circulated by several SNSs, indicates a cultural change toward a new society with new features that may conceal a lot of the features of its original faith, customs, and traditions. The study utilized a non-probability sampling method and the sample consisted of (1004) Sudanese males and females. The findings showed that SNSs contributed to the increase in professional competence and career success. Also, SNSs have affected national identity by fostering cultural openness towards others and causing the globalization of societies. Moreover, it encourages religious extremism in society.

Alkhawad (2017) studied SNSs' role in changing the social values of the Sudanese youth by doing analytical descriptive research, the research aimed to discover the SNSs and the interests and motives of youth for using Facebook. Especially the negative and positive aspects of SNSs, the compatibility of the contents posted on Facebook with social values, and the importance of protecting youth from moral deviation. Alkhawad intended to raise community security. The study results revealed that 92.2% of the study sample has a personal account on Facebook and those who do not have an account on Facebook, because of lack of time and they believe that use of Facebook is a waste of time. Also, survey results showed that the quantity of hours wasted is less than an hour and a half daily, and that is a low use rate.

Nemir (2018) conducted a study on interactive communication through the Internet and its influence on Sudanese universities students in the period of 2015-2018. To recognize the reflections and the changes caused by the communication through internet and its various networks in terms of daily practices and existent challenges and how to interact and deal with them. The study intended to identify the concept of communication, social sites, and applications the use of these websites and applications among the students, and their impact on students' behavior. The study implemented the analytical descriptive method and used the non-probability sampling technique. The questionnaire, interview, and observation were utilized to gather the data. The most valuable results of the research were: that the SNSs assisted in spreading religious extremism among the students and convincing them to radical ideas. Social websites contribute to the exchange of experiences and skills, and Facebook is the most used and influential website among students. WhatsApp gave the students the chance to show their unknown talents by using photos and videos. The students did not utilize social websites for academic knowledge.

Wedaatallah (2014) studied the role of SM in covering university student's issues. An applied study on a sample of Sudanese university students in the time from January 2013 to December 2013. The research intends to recognize the role of SNSs in addressing university youth issues. The researcher combined the survey method within the framework of descriptive research to collect, analyze, and interpret data and information and draw conclusions, and the comparative method for making quantitative and qualitative comparisons and evaluations. For collecting data, the researcher applied the questionnaire as a main tool, as well as observation and interview. The findings showed

that the members of the researched sample use SM at a high rate up to 99.7%, which indicates a good selection of the research sample. The findings showed the social role played by social websites in covering the issues of Sudanese university students. In contrast, the results also showed the weakness of SNSs in addressing students' academic issues.

Saleh (2012) studied the attitudes of Sudanese youth towards the Internet by investigating Internet usage by Sudanese youth and their motives and tendencies to use it, to find ways to enhance the positives of the Internet and reduce its negative effects by directing them toward optimal exploitation of the Internet. The researcher relied on the survey method as a research method. Also, used the survey to gather the research data. The research sample comprised (477) female and male students, they were chosen randomly. The study concluded that communication and interaction with others through social websites got a large proportion of students, as it has become a virtual community, especially in recent years, as it plays a major role in young individuals' lives. In other words, the youth utilize the internet to link and interact with others. SNSs have a high ratio of use among youths. The research findings also found that academic websites, which provide information services about academic courses or scientific research, come at the forefront of websites and are the first motivation for young people to use the Internet. Chat, entertainment and amusement sites, sites for listening to songs and watching movies, as well as sports sites take a significant proportion of young people's tendencies towards the Internet when compared to religious, technical, service, and cultural sites, and this is a serious indicator that reveals the cultural, scientific, and religious level of young people. According to the study, the percentage of uploading electronic materials to the Internet was low (38%).

The effect of SNSs on university students has been studied by the Vision Center for Public Opinion Studies in 2012. The core object of the research was to recognize to what extent SNSs impact Sudanese university students. The research used a descriptive and analytical approach, which is considered the most appropriate approach for the nature of this research, which seeks to ask questions and find answers whether through descriptive or analytical statistics. The study results disclosed that a high portion of young people use these sites and see the benefit from them on a personal level and that a large percentage of youths are involved in some social websites including Facebook, X, and MySpace, and the reason for their attraction to these sites is to communicate with others.

The study indicated that some of the respondents believe that communication through these social networks has no negative effects on academic achievement and that blocking some SNSs by some countries contradicts the principles of freedom.

Bashir (2013) conducted a study on the attitudes of students' public opinion towards SM by applying a questionnaire to a sample of users of Facebook from the International University of Africa students. The study utilized the descriptive analytical technique. The study basic target is to figure out the trends in students' public opinion towards SNSs, especially Facebook. The sub-goals of the study include identifying SNSs and their importance, advantages, types, pros and cons, and recognizing the extent of their impact on human behavior and the formation of trends and attitudes on the cognitive gratifications achieved by SNSs. The study results revealed that Facebook is one of the most important SNSs for the study sample and that half of the participants approve that Facebook is indispensable for university students, also most of the respondents emphasized the role of Facebook in learning about other cultures and its role in entertainment.

Omar (2020) conducted a study on SNSs and their role in shaping qualitative public opinion. The study aimed to recognize the role of SNSs in the formation of qualitative public mind towards economic, political, cultural, and social, issues. Omar intended to find out to what extent SNSs can assist in the formation of public view. Omar conducted a descriptive research method by applying a questionnaire to a sample of SNS users in the state of Khartoum. The study disclosed that SNSs have an effective function in shaping the attitudes and behaviors of the masses toward qualitative public opinion. Study findings also revealed that SNSs have become an alternative to traditional media, due to their access to many users easily and quickly. Moreover, SNSs have a greater freedom space than old-style media, which implies that the use of SNSs can boost the chances of forming a qualitative public view.

Algam (2018) studied the role of new media in shaping university youth culture in Sudan (an applied study on a sample of Khartoum State University students from January 2015 to January 2017 by using a descriptive survey method, the sample of the study was the universities students in Khartoum state, the sample consisted of "400" individuals from 8 universities, 150 out of them are male while 245 are female students, in addition to 18 individuals of academic experts from media and educators. The study findings discovered that the most important motivations of youth for using the new media

is the social communication, entertainment, and amusement, besides cultural and scientific motivation. Findings also showed that Facebook, WhatsApp, YouTube, and Instagram are the newest media websites that contribute to forming the culture of university youth. If the Sudanese cultural heritage is marketed attractively by new media, youth can be attracted to it. New media has made youth the most important group of society that is relevant, admired, and imitator of the values and styles of Western life and culture.

Musa (2017) studied the influence of social networks and their reflections on youth culture in Khartoum state. The study was applied to the users of the Facebook website and WhatsApp application in Khartoum State from January 2015 to January 2016. Musa tried to figure out social networks and their positive and negative impacts by investigating the cultural impacts of SNSs on young people. The study findings revealed that the mobile phone is the most used means by users to engage in SNSs because of its features that make it preferable mean than other devices. Findings also showed that the main reasons and motives of young people for using social networks are to learn and get acquainted with other cultures as well as to communicate and chat with other people.

Fadl-Alseid and Musa (2018) conducted a study on digital media and its reflections on the content of the media message. They intended to determine the correlation between digital media and the content of media messages and to identify the reflections of digital media on the content of media messages. What are the bases of civilizations' exchange and the challenges obstructing them? What are the reflections of digital media on exchanging civilizations? They used a descriptive-analytical method to take a sample of digital media experts. Their study's sample consisted of (90) persons, from experts and specialists in the media field in Sudan and Aljazeera News Network. Their results also showed that digital media has reflections on the content of media messages. One of the major messages selected by digital media was news messages, then research and studies in order, whereas building private relationships was selected by study samples in a lower ranking.

Al-Mansour (2012) conducted a study on the impact of SNSs on the audience of recipients. This study intended to reveal the form of the social sites of the Al-Arabiya channel "Facebook" by comparing the shape of the social outlet "Facebook" with the shape of the website (Al Arabiya Net) of the Al Arabiya channel. The researcher used a descriptive survey method, and within this framework, he used questionnaires, survey

lists, and content analysis forms. The findings showed that the Al-Arabiya websites (social websites and Al-Arabiya net) provide a variety of news content. Also, the Al-Arabiya website is distinguished from other websites by allocating the "change" corner, which includes special pages, dealing with the latest news and developments of the events related to the Arab Spring Revolutions.

Nasir and Ahmed (2018) used a descriptive-analytical method to probe the impact of SNSs (WhatsApp and Facebook) on Sudanese university students. Their research sought to introduce modern challenges and problems, and how to address them, in light of the principles and theories established by each system or state through internal and external media and the legitimate methods of each system and country. This study sought to identify new communication, its broad boundaries, diverse forms, advantages and disadvantages, social network outlets such as WhatsApp and Facebook, and their effect on the student population. Their findings revealed that social network outlets assisted in increasing the extremism of religion amongst students and persuaded them of extreme notions. Social networking services enable you to speak with one another without restraints. The study recommended that families instill virtues and values in their children so that they are not exposed to values that compress and mold them.

Shikani (2010) researched to reveal the nature of the (new media) that was born in the information age, in the light of two prominent phenomena that characterize this era, the phenomenon of (the explosion of information) in an unprecedented way and the phenomenon of (remote-distance communication). Where this new media style carried all the manifestations and contradictions of the era in which it was born and acquired new features that distinguish it in concept, functions, and impact from previous media systems. Also, the research sought to introduce the new media and identify its features and the elements that assisted in its evolution and development. Determining the technical means that it uses to deliver its communication messages. In addition, it recognizes the major transformations in the printed and electronic media industry (cinema, radio, and TV) and identifies the influences of these new media styles on the means of communication.

Regarding research on SNSs and interpersonal communication among university students, Al-Khaddam (2013) investigated the impact of SNSs on the student's social interaction at University College Irbid Girls by using an analytical and descriptive technique to evaluate the study data. The study sample comprised 296 female students. The study results showed that statistically there is a substantial relation between the usage

of Facebook and the time spent and the student's social interaction. Also, Facebook impacts students' behavior at the university because it decreases the students' desire to have interpersonal relationships with others. Moreover, findings revealed that the use of Facebook facilitates the interaction process with others. However, it impacts interpersonal contact with family and friends by decreasing personal communication with family and friends. There are no statistically significant distinctions regarding the effect of Facebook use on the social communication of the students because of regular income, academic level, and specialization. However, there are statistically significant distinctions regarding the effect of using Facebook on the interpersonal communication of the students because of their place of residence.

Regarding SNSs and public opinion, Mohammed (2013) conducted research on the effectiveness of SNS in shaping public opinion by applying it to the pages of the Ministry of Interior Qatar during the period (2011-2013). The researcher aimed to examine the effectiveness of SNSs in shaping public opinion and to figure out the methods used by these sites to attract the attention of the public, as well as to know the topics that interest the public. Moreover, to identify to what level SM influences the process of shaping public view. Mohammed also tried to explore what SNSs users are exposed to, and how this can affect their opinions. He used the survey method as a research method and observation, interviews, and questionnaires to collect the research data.

The study findings reached the diversity of SNS and networks that are used to interact and communicate with the public, and these sites have contributed to introducing people to each other and discussing various political and social issues and other issues because of the characteristics that distinguish them from other means of communication. The findings confirmed the importance of using electronic media in addressing public opinion to impact it and working on shaping its trends. Influencing public opinion requires a persuasive speech based on the correct uses of media besides transparency and credibility. SNSs could impact public opinion, cognitively, emotionally, and behaviorally positively and negatively. The usage of SNS demands understanding the behavior of society and developing strategies and consistent policies that describe how to use them. The usage of SNS by the Ministry of Interior in Qatar contributed to impacting the public mind and drawing a positive mental image of the ministry as well as introducing the public to its services and how to deal with it.

After reviewing the literature related to SMU in Sudan it can be stated that a great part of current studies concentrated on investigating the role of SNSs in shaping the culture of students (Aldaw, 2017; Musa, 2017; Algam, 2018). Some other studies concentrated on the Internet impact and the role of SNS in areas such as forming public view (Omar, 2020; Mohammed, 2013; Bashir, 2013), student issues (Wedaatallah, 2014), student attitudes and behaviors (Nasir and Ahmed, 2018; Saleh, 2012; Nemir, 2018), youth motivations for using Facebook (Alkhawad, 2017).

There is a deficiency of research on students' motivations for using SM platforms during crises. Therefore, this research tries to close this gap in the literature on SMU during crises. Also, some of these studies focused on studying only one or two SM outlets such as WhatsApp and Facebook (Musa, 2017; Alkhawad, 2017; Nasir and Ahmed, 2018). Whereas, this research investigates all available SM platforms, because empirical research demonstrated that youngsters commonly utilize more than one SNS, even though the latest data revealed that Facebook is the top common and heavily utilized SM among youths (Lenhart, 2015, as cited in Bányai et al., 2017). Consequently, the evaluation tools are incapable of tracing the constantly changing trends in the field of SMU. Given the extensive use of different SM among adolescents (Lenhart et al, 2010, Ahn, 2011. The study must evaluate all available SNSs and the whole variety of activities on these SNSs rather than only one specified SM such as Facebook (Griffiths, 2013).

2.14. Changing The World in The Society of Network

Societal movements have historically driven societal change and continue to do so now. They are typically caused by a crisis in living conditions, making ordinary life unbearable for the majority of people. They are motivated by a profound mistrust of the political structures that govern society. The combination of deteriorating material living conditions and a crisis of legitimacy among the governors accountable for public affairs drives individuals to take matters into their own hands, engaging in collective work outside of the authorized institutional channels to defend their demands and, ultimately, to change the governors and even the regulations that govern their lives. However, this is risky conduct because the preservation of the social system and the steadiness of political institutes indicate power relationships that are imposed, if necessary, through intimidation and, in the worst-case scenario, through the usage of force (Castells, 2015). Social

movements are frequently initiated by emotions drawn from a meaningful event that enable protesters to defeat fear and oppose the powers that be, despite the dangers innate in their actions. According to recent social neuroscience research, social change requires an individual or collective activity that is emotionally motivated, as is all human behavior (Damasio, 2009, as cited in Castells, 2015).

As stated by Castells (2015) the social movements that occurred around the world in recent years share several characteristics:

- *They are networked in a variety of forms*. The utilization of Internet and mobile communication networks is required, although the networking format is multimodal. It includes both online and offline social networks, in addition to pre-existing social networks and networks developed because of movement activities.
- While these movements typically begin on online social networks, they become a *movement by taking up the urban space*, whether through the standing occupation of public squares or the perseverance of street protests.
- *Movements exist both locally and globally at the same time*. They begin in specific situations for their causes, construct their networks, and create public space by taking up urban space and linking to online networks.
- In the context of their genesis, *these movements are primarily spontaneous, often ignited by a spark of outrage* over a single occurrence or a peak of discontent with the rulers' behavior.
- Movements are spread quickly and follow the logic of Internet networks (Nahon and Hemsley 2013, as cited in Castells, 2015, p.252). This is due not only to the viral nature of message dissemination, particularly motivating pictures, but also to the demonstrative impact of movements forming everywhere.
- *The transition from indignation to hopefulness is performed via deliberation and discourse in the autonomy space*. Decisions are often made in assemblies and committees established inside the assembly. These movements are typically, but not always, not led by a single individual. Not because there aren't enough potential leaders, but because most members of the movement have a profound, instinctive fear of any type of power delegation.
- *These movements are scarcely programmatic* unless they focus on a specific, single issue: down with the authoritarian regime. They do have various demands:

almost always, all feasible demands from citizens who are passionate about controlling the conditions of their own lives.

2.15. Crisis Definitions

Conflict, crisis, and war are complexly interconnected, theoretically and empirically. All are attributed to mutual mistrust between enemies, tension, disorder, and hostility. Violence, the core feature of war, is often, though not necessarily, present in conflict and crisis (Brecher, 1996, s.127). Wobodo, Orianzi, and Oko-Jaja (2020), argued that crises are caused by both human and natural factors. Natural forces can cause devastation to organizations without warning, necessitating careful planning and commitment to contain them. Also, Mehrotra, Znati, and Thompson (2008) highlighted that dealing with crises situations caused by nature or human action is a key problem for modern society. In contrast, the human aspect of crisis arises because of long-time unresolved conflicts and administrative mistakes (Mehrotra, Znati, and Thompson 2008, as cited in Wobodo, Orianzi, and Oko-Jaja, 2020, s.5).

Although there is a dissimilarity between crisis, emergency, and catastrophe, they are nearly interrelated, intertwined, and overlapping substantially. A crisis is a disturbance that physically impacts a structure entirely and endangers its fundamental presumptions, subjective perception of oneself, and existential and factual core (Pauchant & Mitroff, 1992). Alexander (2005) described a crisis as an unusual circumstance that puts forward a great danger to business and may provoke swift policy alterations as it attracts media and public attention and endangers public trust. The importance of a crisis lies in its unexpectedness, unpredictability, and uncontrollability which interrupts and obstructs normal processes.

2.16. The Sudan Crisis

The year 2019 marked a critical juncture in Sudan's contemporary history, as it marked the beginning of enormous revolutionary changes in Sudanese society, which became known as the 'Sudanese Revolution'. The Sudanese Revolution is also a significant moment in the history of social movements in the global South (Elsheikh, 2019). Sudan's public movement appeared to be the most successful modern revolt in the Arab world and on the African continent until October 25th, 2021. According to its

revolutionaries, this is due to a well-organized communication strategy that unites the people, a strong dedication to nonviolent values, a prospering street-art public sphere, and its link to internet dissidence (Wessels, 2023). It was part of a wave of over 90 populist revolts demanding political and social change that overran across more than 40 African countries since 2005, some dubbed 'bread revolutions', grassroots protests austerity measures (Elamin, 2020).

When the world thought the Arab revolts of 2010/2011 were over, the year 2019 witnessed new, revived, and surprisingly successful and effective public protests in the Arab-speaking world. A recurring pattern emerged from Sudan and spread to Algeria, Iraq, and Lebanon. Street protests happened in both Lebanon and Sudan before 2019, indicating a developing ripple effect in which these protests are cyclical movements that progress over time rather than isolated instances of resistance. The various revolutions share some significant repeating commonalities. These revolts were marked by digital dissidence and the use of SM as means of communication among demonstrators (Wessels 2019).

The Sudanese Revolution emerged from a history of social movements and revolts. Since its independence, Sudan has witnessed three short terms of multi-party rule known as the 'Democracies': 1956-1958, 1964-1969, and the third and final during 1985-1989. However, as stated by Mustafa and Abbass (2020) despite multi-party parliaments in all three democracies, women and individuals from marginalized, non-Arab identifying, regions had low to non-existent involvement. As a result, they consider the Sudanese Revolution as a seeking to break the historical cycle and implement a broader and more inclusive kind of democracy than the country's prior three 'democracies' (Mustafa and Abbass 2020). The social revolution of 2019 represents a significant shift toward a more comprehensive and participatory government that represents all Sudanese without exclusion. The ultimate purpose and ambition of this revolt is to create a more comprehensive, effective, and informed Sudanese society.

When viewed from a media-centric perspective, the protests were organized by Sudanese activists using various communication tactics on the ground. In addition to using pre-existing networks, SM, and photos were utilized to notify activists and announce the date, time, and location. A creative revolution in graffiti and street art conveyed the demands of the demonstrators, their dreams for the future, and the remembering of injustices and wrongs that ought to be righted (Dahir 2019). The

technology and structure of these communication networks influence the mobilization process, and hence social change, both as an operation and as a result (Toret, coordinator, 2014 as cited in Castells, 2015). In this vein, Fuchs (2015) also stated that higher levels of protest participation are associated with increased media use for protest mobilization. Mobilization in face-to-face communication has a favorable influence on other forms of mobilization communication, such as the use of SM to disseminate the news about protests. Activists employ a variety of media, including offline and online, technologically mediated and unmediated, digital and non-digital. The 2011 protests were characterized by the establishment of occupied squares as public spheres, as well as the organization and expression of political demands both offline and online.

The Sudanese current crisis began when demonstrations erupted in various Sudanese cities in mid-December 2018 against the government, due to the huge increase in petrol and bread prices since the government liberalized the currency rate in late 2018. The price of the US dollar hit 45 Sudanese pounds, but it reached 70 pounds on the parallel market. It resulted in a massive wave of inflation and a precipitous spike in prices. However, the roots of Sudan's crushing economic crisis go back to the secession of South Sudan in 2011, where Sudan missed three-quarters of the petroleum that represented half of the budget in the past decade, as the Sudanese economy depends on oil as a primary source of income, and with the cessation of that source, the economic situation gradually worsened since then, resulting in a sharp decline in the value of the currency and an increase in inflation (Ali, 2019). The first street demonstrations of the Sudanese revolt took place in December 2018 in the Blue Nile Region and Atbara city, outside of Khartoum. From these, more demonstrations soon followed and expanded across the country (Elsheikh 2019; Elnaiem 2019; Mustafa and Abbass 2020).

Sudanese citizens took to the streets to show their discontent against the backdrop of the deterioration of the economy. The protests, which began as a response to rising prices and shortages of bread and other necessities, as well as proposals to end some subsidies, quickly escalated into anti-government rallies and demonstrations, with calls for Bashir's resignation. On the 19th of December 2018, during one of the first large protests in ʿAṭbarah (Atbara), protesters set fire to the local headquarters of the National Congress Party (NCP) (Ahmed & Robert, 2024). In this vein, Castells (2015) stated that the social movements that have broken out around the world were the result of a constructional economic crisis and a worsening crisis of legitimacy. The worldwide food

crisis had an impact on the livelihoods of most people in the Arab countries, as the cost of essential staples, especially bread, became unaffordable for a population that expends the majority of its little income on food.

The Sudanese Professionals Association (SPA) was considered a key player in the mass protest movement and was instrumental in organizing and leading revolutionary street demonstrations (Elsheikh 2019; Elnaiem 2019; Mustafa and Abbass 2020). The SPA, as a multi-lateral platform, represented a cross-section of Sudanese governance sectors, including health, education, culture, the judiciary, and environmental governance (Wessels, 2023, p12). The SPA was able to bring Sudanese protesters together against Al-Bashir's repressive regime and transform a spontaneous mass street movement into a representative multistakeholder citizen platform with specific demands thanks to the widespread reach and representation of Sudanese society and the unwavering support of the Sudanese people and youth (Elnaiem 2019). Sudanese young revolutionaries attributed the revolution's success to rapid communication technology, the usage of Facebook for organizing meetings and protests, and the enormous number of protesters who gathered in Khartoum. The SPA, a coalition of labor unions, spearheaded the revolution and used Internet technology to arrange the protests. Their WhatsApp groups coordinated quick meetings and responses to the government's retaliation against their dissident behavior (Wessels, 2019, p16).

SM facilitates knowledge and communication, allowing anybody to contribute, and making the communication process more open and transparent. SM allows people to receive and share information, interact, engage, create and distribute content, and connect with others. In other words, using SM to create, connect, share, communicate, and engage improves the quality of life for humans as well as the quality and transparency of society. SM makes society more open, transparent, and connected (Fuchs, 2015). In the same regard, Morozov (2011) stated that one of the many elevated expectations on the Internet these days is that closed cultures will open-up and be infused with democracy till they shed their authoritarian skin. It's hardly shocking that the Internet is thought to be more powerful than nuclear weapons. Cyber-utopianism appears to be pervasive these days. Jon Stewart from The Daily Show has mocked the legendary power of the Internet to achieve what even the world's most sophisticated military forces find extremely challenging to accomplish such as in Iraq and Afghanistan. Where, Riccardo Luna, the editor of the Italian edition stated that the Internet is a “first weapon of mass construction",

which can be utilized to destroy conflict and hate and to spread peace and democracy. According to Chris Anderson, the editor of the first American version although "a Twitter account may be no match for an AK-47. in the future the keyboard is mightier than the sword," The editor of the British version, David Rowan, indicated that the Internet "offered each and every one of us the opportunity to reclaim the power from governments and multinationals." It made the world completely transparent space. How can a world that is completely transparent not also be more democratic?

The demonstrations intensively continued for months in the nation's capital, Khartoum. On April 6th, 2019, a mass march was attacked with terrible consequences, prompting a sit-in in front of Khartoum's military headquarters (Mustafa and Abbass 2020). Afterward, the demonstrations and sit-ins culminated in the overthrow of Omar Al-Bashir's autocratic rule on April 11, 2019. Where this massive popular pressure ultimately persuaded the military to depose Al-Bashir and take him into custody, imprison him, and establish the so-called Transitional Military Council (TMC), which echoed the declaration of Forces for Freedom and Change (FFC) and promised to work on a democratic transition. The military then tried to retain power in the Transnational Military Council, prompting the protesters to continue their sit-in. Street protests and an uninterrupted mass sit-in known as the Qiyada were primarily organized by several workers' unions affiliated with the Sudanese Professionals Association (SPA). The street demonstrations, particularly the Qiyada, gave many diverse Sudanese residents a public forum to argue what changes were needed in Sudan and their demands. Many different activists from a diverse range of professionals were contacted thanks to the SPA and its unique strategies for organizing and mobilizing the people for change. In-person meetings were held to prepare for the street demonstrations, develop slogan signs, and plan organization and the protest routes (Elsheikh 2019). The SPA's communication expanded to the streets, where union tents and stepladder speeches informed the public. At the same time, volunteer checkpoints banned the use and entry of weapons into the sit-in zones (Elnaiem 2019). Thus, the demonstrations and Qiyada became sites of public debate in a citizen-led discursive arena, which Tufte recognized as a socio-centric approach to Communication for Development and Social Change (CDSC) (Tufte, 2017). In August 2019, a transitional government was established to prepare for the ultimate transition to civilian governance and the general elections of 2022 (Abdel-Rahim, 2022; Wessels, 2019, p. 15). Policymakers shouldn't disregard the numerous successes of activists who

have utilized SM and the Internet to their advantage around the world. Examples of these include from exposing dubious practices of some companies to spearheading campaigns against governments. However, even when these campaigns are successful, there are always unintended social, cultural, and political consequences Morozov (2011).

Popular revolutions against authoritarian regimes were more effective in other regions of the Arab world. The Western media has given the 2019 Sudanese revolution virtually little attention. Still, the popular revolt in Sudan is one of the most successful nonviolent revolts in the Arab world, especially, when compared to all earlier upheavals in the Middle East and North Africa (MENA) area since 2011. A significant contributing factor to the success was documenting the demonstrations using mobile phone videos, which rapidly spread and gained widespread popularity. What evolved was a rapidly developing mass popular and nonviolent movement, with primarily young people joining the protests. Although they frequently warned their children not to participate, when the protests appeared to be having an impact, the older generations joined also the Sudanese revolution. The regime attempted to suppress the rebellion, but the large number of protesters and the size of the crowd instilled fear in regime supporters. Millions gathered in Khartoum, and after Al-Bashir's arrest, a mass gathering at the Green Square, renamed "Liberation Square," took place (Wessels, 2019, p16).

Following the successful street demonstrations that resulted in the establishment of a transitional government in August 2019, the SPA and the nascent civilian government took on the enormous task of reforming and changing all sectors of Sudanese society to eventually give rise to the state of democracy visualized by both the SPA and the Forces for Freedom and Change (FFC). The FFC was established on January 1, 2019, on the 63rd anniversary of Sudan's independence, when 22 entities, including the SPA, and others, signed the so-called 'Declaration of Freedom and Change' (Elsheikh 2019; Elnaiem 2019; Mustafa and Abbass 2020, as cited in Wessels, 2023, p12). This declaration made specific demands and called for 1) Ending the regime immediately and unconditionally; 2) Forming a representative transitional government of qualified individuals based on a popular agreement to govern for four years, restore the economy, redirect country resources, ensure women's rights, and negotiate peace until democratic and fair elections based on democracy, justice, and freedom values; 3) putting an immediate halt to abuses against peaceful protestors, remove all laws restricting freedom, and prosecute those who have perpetrated crimes against the Sudanese people. They

pledged to occupy the streets until their demands were granted (Mustafa and Abbass, 2020: p. 22).

The FFC declaration united together individuals from all levels of Sudanese society, including grassroots, civil society, and Sudan Call, a coalition of opposition groupings and armed resistance forces (El Naiem 2019). Following the deposing of Al-Bashir, negotiations began between the FFC and the TMC. However, not all opposition parties and stakeholders were persuaded of the TMC's intentions and continued to protest and organize sit-ins to demand civilian government (Mustafa and Abbass 2020). However, during the negotiations, security personnel repeatedly cracked down on the sit-ins. On May 13, 2019, the eighth day of Ramadan, security forces stormed the General Command sit-in in Khartoum, resulting in the revolution's first massacre. The massacre of the eighth Ramadan sparked a surge of outrage on the streets, fueling demonstrators' outright rejection of the Military Council. At that moment, chants of '100% civil' erupted in opposition to negotiating ideas for shared rule between military and civil officials. There were also demands for a national political strike to push the military to relinquish power. The FFC's political leadership was sluggish to respond to demands for a strike, with some openly opposing it. The SPA called a political strike, prompting grassroots organizations to prepare and publicize the plan. The strike exacerbated tensions with the Military Council, prompting threats and arrests. The walkout on May 28 and 29, 2019, paralyzed the country's airports, seaports, institutions, and marketplaces. (Alneel, 2021).

Tensions rose, and on June 3, 2019, when Ramadan was nearly over, the TMC shut down the internet and stormed the Qiyada in Khartoum and other cities around Sudan, leading to a massacre in which more than a hundred demonstrators were murdered by loyalist militias (Mustafa and Abbass, 2020; Alneel, 2021). The capital of Sudan, Khartoum, has become a witness to the divisions regarding the management of the transitional phase, as warring parties organized demonstrations and protests during a political crisis took place in Sudan. Whereas the Sudanese people were suffering from crises in all aspects of life. Sudan is witnessing political division, there were two conflicting parties; and each party sought to defeat the other (Ferragamo, & Roy, 2024).

On October 25, 2021, tenseness between the military and civilian parts of the transitional government came to a deadlock when the Chairman of the Transitional Sovereignty Council and his supporters attempted to arrest many key civilian members of the government, including Prime Minister Abdallah Hamdok. A military coup was

carried out to disrupt the constitutional process of democratization to protect the advantages enjoyed by military generals for so many years (De Waal 2021 as cited in Wessels, 2023, p20). Since October 25, 2021, Sudan has been going through popular protests demanding the return of civilian rule and rejecting the exceptional measures of the President of the Sovereignty Council, which those who reject it consider a “military coup.” The political, economic, and security situation has continued to deteriorate since October 25, and the protesters continue their “revolutionary” movement to demand civil rule (Abdel-Rahim, 2022). Abdallah Hamdok was reinstated but resigned before the end of 2021. He stated that he worked tirelessly to progress the country but lacked the freedom to do so (Dahir 2022).

The transitional authority, containing civilians and military personnel, was supposed to run the country until general elections, but a civil war began when conflict erupted on April 15, 2023, between the Sudanese Armed Forces, the nation’s military, and a paramilitary group named the Rapid Support Forces (Ferragamo, & Roy, 2024). The severe fighting displaced over 10.2 million individuals, including internally displaced persons (IDPs), asylum seekers, and refugees. This clash worsened many of Sudan's existing issues, such as continuing fights, illness outbreaks, political and economic instability, and climatic emergencies (UNHCR, 2024). The conflict also has made an already dangerous humanitarian situation worse, which in turn led to the dissemination of mass starvation situations. Sudan was already going through a serious humanitarian crisis before the conflict erupted, more than 15 million people were confronted with a grave food security crisis, and millions of individuals were displaced internally. Also, the country was already housing about 1.3 million refugees, most of them from neighboring countries (Ferragamo, & Roy, 2024).

3. RESEARCH METHODOLOGY

This research is a quantitative descriptive research based upon a survey research method that seeks to depict the current state of using SM platforms by Sudanese university students during crisis time. Quantitative research is described as the conventional scientific method to research which has its underpinnings in the philosophical model for human research known as positivism (Polit and Hungler, 1999 as cited in Walker, 2005). In general terms, quantitative research methods are focused on gathering and analyzing data that is structured and can be represented in numerical form. One of the main objectives is to build precise and reliable measurements that enable statistical analysis. Because quantitative research focuses on data that can be measured, it is highly effective at answering the "how" or "what" of a given situation. Questions are direct, quantifiable, and commonly include phrases such as to what extent? What proportion? what percentage? how many? how much? (Goertzen, 2017).

Quantitative research requires looking at amounts, or quantities, of one or more variables of concern. Quantitative researchers aim at seeking predictions and explanations that will be generalized to other persons and places. The purpose is to determine relationships among two or more variables and according to the results, to confirm or modify existing theories or practices. Quantitative researchers usually seek to measure variables numerically, probably by making use of generally accepted measures of the physical world (for example rulers, oscilloscopes, thermometers) or carefully designed measures of psychological behaviors or characteristics (such as questionnaires, tests, rating scales) (Leedy and Ormrod, 2015).

Descriptive research investigates a situation as it is. It does not require modifying or changing the situation under investigation, nor is it aimed at defining cause-and-effect relationships (Leedy and Ormrod, 2015). Kothari (2004) also stated that the major object of descriptive research is to depict the situation as it occurs at present. Descriptive research presents a description of the attributes of groups, individuals, or situations (Jack and Clarke, 1998 as cited in Walker, 2005). Descriptive research is those studies that focus on depicting the traits of a specific individual, or a group (Kothari, 2004).

Descriptive research aims at depicting a precise profile of people, situations, or events (Robson, 2002 as cited in Mohajan, 2020). It indicates the kind of research questions, design, and data analysis that will be utilized for a particular subject. It investigates a phenomenon that is happening at a certain time and place. It is focused on

conditions, structures, practices, distinctions, or relations that exist, and thoughts that hold obvious processes. It collects and analyzes empirical data, and thereafter arranges, tabulates, classifies, illustrates, and describes the data gathering and seeks to evolve knowledge (Glass & Hopkins, 1984; Best & Kahn, 2007 as cited in Mohajan, 2020).

The focal intent of this research is to discover the reasons and motives of students for using SM platforms and determine their preferences by analyzing the reasons and motivations that drive them to use SNSs during times of crisis. Also, the research aims to understand how students access these sites, what they do on SM, and how they benefit from it specifically during times of crisis. Moreover, the research intends to debate if these motivations in accordance with the four motivating needs (entertainment, personal identity, information, and social interaction) proposed by McQuail (1994).

The general object is to find out new meanings, to depict what exists, to specify the frequency with which something occurs, and to classify information (Burns and Grove, 1999 as cited in Walker, 2005). The descriptive research method is used extensively in several fields such as education, nutrition, epidemiology, and the behavior al sciences. It seeks to collect information concerning prevalent conditions for the aim of explanation and interpretation (Aggarwal, 2008 as cited in Mohajan, 2020). It determines the research attributes i.e., who, what, when, why, where, and sometimes how of the research which must be viewed as an end instead of an end, itself (Yin, 1994 as cited in Mohajan, 2020). The object of this kind of research is to find out and define tendencies and differences in populations, to design new gauges of major phenomena, or to describe samples in research intended for discovering causal effects (Loeb et al., 2017).

3.1. Ethics Statement

The research was found ethically appropriate by the Research and Publication Ethics Committee in the letter dated 24.01.2023 Ethic No 39/41. Issue: E-54380210-050.99-479496.

3.2. Data Collection Methods and Sampling

This research utilizes a questionnaire as a main data collection instrument, in addition to secondary data such as statistics and reports from formal sources such as the Sudanese Ministry of Communications and Digital Transformation, as well as

international statistics websites such as “wearesocial.com” and “datareportal.com”. The questionnaire was developed to supply comprehensive replies to research questions. The questionnaire was created via Google Forms, a software for administering surveys, which was introduced as part of the free, online Google Docs Editors suite supplied by Google.

The questionnaire was distributed online (via email, SNS, such as WhatsApp, Facebook, etc.) targeting university Students in Sudan. This is to ensure the chance to reach and access a huge number of students and a broad spectrum of SM users while they are using these sites. The questionnaire was applied to students because the use of SM is popular amongst the young generation, and they are the top actual users of SM; thus, they would offer a good image of what typical SNSs users seek regarding their motivation for using SNSs. Using SNSs is among the top common activities of today’s adolescents and children (O'Keeffe & Clarke-Pearson, 2011).

College students are regarded as a large online network user group (Lenhart et al, 2010), the targeted population of this study is SM users with internet access, the sample was taken from undergraduate and graduate students registered in Sudanese universities. The research sampling technique was non-probability by taking convenience sampling from university students.

3.3. Survey Questionnaire

The questionnaire consisted of six sections. These included: (1) demographic data; (2) accessing and frequency of SMU; (3) seeking information and trust in sources of information; (4) social networking usage; (5) SM disinformation; (6) an open-ended question regarding the students’ reasons and motives for using SM. The study adjusted the scale of Gupta & Bashir, (2018) to measure social networking usage. It is a 5-point Likert scale (every statement assessed by five anchors as follows: (Always=5, Often=4, Sometimes=3, Rarely=2, and Never=1). The study adjusted also the scale of Guelmami et al., (2021) (SMDS-12) to assess SM disinformation, which contains items rated on a 5-point Likert-type scale ranging from "strongly agree" to "strongly disagree".

At the end of the questionnaire, the students were requested to reply to an open-ended question “What is your main reason for using SNSs?” This question was developed to achieve a full, expressive, and meaningful response by using the participants' expressions and descriptions of why they participated and engaged in SNSs. The major

objective is to reveal the students' motivations for using SNSs and their participation during crises.

3.4. Descriptive Analysis

Descriptive analysis is a valuable tool in conducting research. It can be utilized in a broad range of studies, both descriptive and causal in nature. In the descriptive analysis, information should be presented in a format that is easily understandable for a particular audience or audience. The approach to descriptive analysis is iterative, where each step builds upon others and requires reconsideration and modification as the researcher's comprehension of the phenomenon and the study develops. Descriptive research does not describe data, rather it utilizes data to describe the world to identify and improve our understanding of socially significant phenomena (Loeb et al., 2017).

3.5. Thematic Analysis

The qualitative thematic analysis is utilized to analyze the data gathered from the open-ended queries within the questionnaire. The students were inquired about their main reasons for using SM. Braun and Clarke (2006) define thematic analysis as the process of analyzing responses to open-ended questions. In this analysis, a systematic approach is employed to identify patterned themes or responses within the dataset. This research pursued the six-stage analysis depicted by Braun and Clarke (2006):

1- Familiarization: In this step, the researcher should familiarize himself with the data by reading and rereading it, noting down initial thoughts, and looking generally over the data to get familiar with it. Because it's significant to get a comprehensive view of all the collected data before starting the analysis process of individual items. In this study, all responses to the open question were read repetitively by the researcher to acquire a profound grasp of the data.

2- Creating initial codes: The researcher systematically must code interesting data aspects, and related qualities of the data across the whole data set and organize and collect data related to each code. In this research, all related sentences, phrases, or paragraphs regarding the research question were obtained and given a code, which is a short label that summarizes the core of the text unit. The

researcher discusses, refines, and confirms all the codes. Then the codes were arranged in tables of data display.

3- Generating themes: Looking over the codes that were created, collecting codes into probable themes, and sorting all data related to each possible theme.
4- Reviewing themes: Making sure the themes are representing the data accurately. Verifying the themes relating to the coded excerpt and the full dataset, creating a thematic chart of the study.
5- Identifying and naming themes: Constant analysis to improve the details of every theme, and the general story told by analyzing, and creating clear names and definitions for every theme.
6- Writing up the report: The last chance for analysis. The analysis process involves selecting intriguing extract examples, analyzing them, linking the findings to the study question and literature, and writing an academic report.

The qualitative thematic analysis was employed to analyze the data gathered from the open-ended question within the questionnaire. The students were questioned about their main reasons for using SM during the crisis. The open-ended question was developed to support and strengthen the quantitative data, acquire diversity in the collected data, and gain a deep understanding of students' motives for using SM. The qualitative data analysis software NVIVO (Version 12) was utilized to analyze the replies of the students to the open-ended question. The qualitative data obtained from the open question was analyzed by the method of thematic analysis. The data was organized and collected beneath eight main themes namely, academic reasons, communication and socialization reasons, entertainment reasons, news and information reasons, business and professional reasons, personal development reasons, technological reasons, and other reasons. As claimed by Boyatzis (1998), thematic analysis is a way of determining, analyzing, and stating themes (patterns) in the context of data. It simply arranges and defines the dataset in deep detail. Nonetheless, it also regularly goes beyond this and explains various traits of the research focus (Boyatzis, 1998).

Braun and Clarke (2006) define a sequence of six stages through which researchers need to pass to conduct a thematic analysis. These phases were stated in detail in the methodology section. This process allows distinguishing themes clearly and provides researchers with a precise definition and methodology while maintaining the "flexibility" inherent in the process's epistemological stance.

A deductive analysis method was used to approach the data through some predetermined themes expected to be found based on the uses and gratification theory, these expected themes were (information, entertainment, social interaction, and personal identity). A deductive analysis is approaching the data with certain predetermined ideas that you anticipate seeing reflected there, based on theory or prior knowledge (Braun and Clarke, 2006). A deductive approach can be utilized as the beginning point which enables analyzing data relating to the themes that have emerged from the literature conducted for the research questions designed for the study. However, each of the related or interesting information (themes) rising from the data can be also considered. Even the unexpected themes can be taken into account to achieve a better comprehension of the phenomenon. Consequently, when analyzing data a great number of inductive codes may emerge (Dawadi, 2021).

3.6. Previous Measurements of Social Networks Usage

After exploring the prior literature on SMU, it has been uncovered that many measurements have been evolved to probe the usage of SNS. The available literature provides a lot of SNS scales that measured categorically use concerning activities and motives, time, contacts, and number of friends. A brief description of considerably cited SNSs scales is presented below in terms of duration, motives, and activities, which have assisted in the research of SNSs.

An instrument developed by Pornsakulvanich and Dumrongsiri (2013), revealed six motives regarding the usage of SNSs, friendship, relationship preservation, killing time, trends, relaxation, and entertainment. This scale was utilized to measure the level to which individuals rated their certain purposes for using SNSs. Bolar (2009) developed a survey consisting of 28 items, on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree) After the factor analysis of the motive statements Bolar introduced seven interpretable aspects as, self-reflection and image-building, information-gathering and problem-solving, utility, networking, revisiting memories, spending time, and peer influence.

Another scale developed by Shin and Lim (2017) aimed at measuring the motivations of college students for using SNSs. The instrument is composed of 30 items, each indicating one of the six subscales namely, enjoyment, social, information, pastime, conformity, and mood regulation. Also, Pertegal et al., (2019) developed an instrument

to measure the motivations of adolescents and youths for using SNSs. The scale contains 27 items distributed into nine factors new friendships, dating, social connectedness, academic targets, following others, monitoring, entertainment, self-expression, searching for social recognition, and requesting information. Shi et al. (2014) evolved a scale to measure the usage of SNSs which has two subscales: the SNSs featured utilization scale and the SNSs affective experience scale (13-item scale to measure featured use on SNSs and 8 items scale to measure the affective experience of usage).

4. FINDINGS

This section presents the data analysis and questionnaire findings of this research. It involves the descriptive analysis of the students' replies, related statistical tables, and charts. Besides, the questionnaire findings were gained from the analysis of the statistical data, as well as the thematic analysis of the open-ended question data. The section ends with a concise brief. As indicated before in Chapter One, the major purpose of this research is to describe the current state of using SM platforms by investigating university students' use of these platforms during the Sudanese crisis, this study attempts to find out the motivations of students for using these platforms and determine their preferences by analyzing the reasons and motivations that drive them to use SNSs during times of crises. In line with the objectives and nature of the research questions, the data analysis was classified into various subsections.

4.1. Data Analysis

The Statistical Package for the Social Sciences (IBM SPSS) software (Version 21) was utilized to analyze the quantitative data collected from the questionnaire. Also, the qualitative data analysis software NVIVO (Version 12) was applied to analyze the participants' answers to the open-ended question. The quantitative data was analyzed by utilizing the descriptive analysis method, while the qualitative data was analyzed utilizing the thematic analysis method. The research employed frequency and percentage calculations to provide descriptive information regarding the characteristics of the participants, including age, gender, and educational attainment. Also, frequency and percentage were calculated for accessing the Internet, type of electronic devices, number of profiles on SNSs, frequency of using SNSs, time spent on SM, seeking information on SM, trusting information, and frequency of using different information sources. Also, means and standard deviations were calculated for age, gender, education level, social networking usage, and SM disinformation. Also, different statistics tests were conducted such as EFA, the Kaiser-Meyer-Olkin (KMO), Cronbach’s alpha, Pearson’s coefficient of correlation, Chi-square, Independent T-test, and One way ANOVA.

4.1.1. Content validity

It was confirmed during the development of the initial draft of the questionnaire by conducting critical debates with specialists who reviewed all items elected for the preliminary draft. The content of every statement was reviewed critically by those experts to examine the relevancy and suitability of these statements in the questionnaire on usage of SM. The statements were revised, modified, and inappropriate statements were removed, and only statements that received agreement among the experts were retained for the final draft. The experts confirmed the final draft of the questionnaire was an adequately valid tool for piloting, finding that the questionnaire statements were entirely acceptable and relevant to measuring SMU among Sudanese university students during the crisis.

4.1.2. Exploratory factor analysis

The quantity of constructs required to represent the data is revealed by the exploratory factor analysis (EFA). By not imposing a preset construction on the outcome, the EFA assists in determining the possible original factor design of a group of observed variables (Child, 1990). The factors of SMU were examined by EFA. Multiple iterative cycles of factor analysis were performed on the data set. After each iteration, the total variance and number of extracted factors were assessed. Following the accomplishment of the EFA, the sample adequacy measure known as the Kaiser-Meyer-Olkin (KMO) was calculated at .865. Tabachnick and Fidell (1996) state that a suitable factor structure should have a minimum Kaiser-Meyer-Olkin (KMO) of 0.60. Bartlett's Test, which should be under 0.05, was 0.000. displayed the existence of relationships among items. The (0.865) value of KMO meets the measures and proposes that sample data is acceptable for the aim of factor analysis. Bartlett's test of Sphericity is high (8843.293) with a 0.000 significance level, and the degree of freedom is 1225, which indicates that the questionnaire factors are interconnected. The detailed info is shown in Table 4.1.

Table 4.1. *Assessment of Sampling Adequacy and Reliability of the Questionnaire*

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.865
Bartlett's Test of Sphericity	Approx. Chi-Square	8843.293
	DF	1225
	Significant	.000
Reliability Statistics		.906

4.1.3. Reliability analysis

Cronbach's alpha is utilized to assess the internal consistency among the items. According to Gliem and Gliem (2003), the Alpha reliability coefficient usually ranges from 0 to 1. George and Mallery (2003), stated that Cronbach's Alpha values over 0.90 indicate outstanding internal consistency, over 0.80 is good, over 0.70 is acceptable, over 0.60 is doubtful, over 0.50 is poor, and less than 0.50 is unsatisfactory, present scale Cronbach's alpha of SMU (α= .906), which demonstrates excellent internal reliability. Consequently, the reliability analysis indicates that the SMU questionnaire is internally consistent.

Factor Structure: The factor analysis of the scale of SMU shows a five-factor structure, explaining the variance, Stevens (2002) indicated that the rate of a factor loading must be more than 0.4 for interpretation aims. The first factor comprised (6 items) regarding informativeness use, the second factor composed of (7 items) relating to academic use, the third factor involved (4 items) about socialization, the fourth factor contained (4 items) related to entertainment, and the fifth factor comprised (1 item) about the verifying the information sources.

Table 4.2. *Social Media Use Scale Statements and Factor Loadings*

Items	**Statement**	**Factor Loadings**				
		1	2	3	4	5
	Informativeness					
Item 20	I use SNSs to look for information related to the crisis	.875				
Item 18	I use SNSs to follow news related to the crisis	.863				
Item 21	I check the information sources for validity by looking at other reliable sources.	.729				
Item 13	I use SNSs to get information regarding current social events.	.716				
Item 19	I use SNSs to share news about the crisis	.693				
Item 12	I use SNSs to keep in touch with my relatives	.500				
	Academic					
Item 2	I use SNSs to do research work.		.780			
Item 6	I use SNSs to learn about my curricular aspect.		.765			
Item 1	I use SNSs to solve my academic problems.		.752			
Item 4	I communicate with my friends via SNSs for preparation for exams.		.666			
Item 3	I use SNSs for online academic group discussions.		.662			
Item 5	I use SNSs for collaborative learning.		.574			
Item 7	I use SNSs to seek help from my teachers.		.427			
	Socializing					
Item 9	I use SNSs to create my social identity.			.807		
Item 8	I use SNSs to become more sociable.			.768		
Item 11	Use SNSs to strengthen personal relationships			.679		
Item 10	I prefer using SNSs to attend social gatherings.			.656		
	Entertainment					

Table 4.2. (Continued) *Social Media Use Scale Statements and Factor Loadings*

Item 15	I use SNSs to look at funny sharing.	.766	
Item 14	I use SNSs for sharing pictures.	.762	
Item 16	I use SNSs for watching movies.	.661	
Item 17	I use SNSs to get relief from academic stress.	.606	
	Verifying information sources		
Item 22	I share the information related to the Crisis without checking the source of the information.		.830

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Bartlett's Test of Sphericity was conducted on the scale of SMU, it was extremely substantial. Consequently, the factor analysis results are appropriate. Based on the initial eigenvalue utilizing the Principal Component Analysis (PCA) and the Rotation Method of Varimax with Kaiser Normalization, the following five factors emerged:

1. Informativeness: activities regarding using SNSs for looking for information related to the crisis, following news related to the crisis, checking the information sources for validity by looking at other reliable sources, obtaining information regarding current social events, sharing news about the crisis, and keeping in touch with relatives.
2. Academic: activities about using SNSs for conducting research, learning about curricular aspects, solving academic problems, communicating with friends by SNSs for exam preparation, online academic group discussions, collaborative learning, and seeking help from teachers.
3. Socializing: activities concerning, using SNSs to create social identity, become more sociable, strengthen personal relationships, and attend social gatherings.
4. Entertainment: using SNSs for entertaining activities such as looking at funny sharing, sharing pictures, watching movies, and relieving academic stress.
5. Verifying information sources: using SNSs for sharing information related to the crisis without checking the source of the information.

Factor Structure: The factor analysis of the scale of SM disinformation shows a three-factor structure, explaining the variance. The scale of SM disinformation has three factors. The first factor comprised of (4 items) relating to sharing, the second factor composed of (4 items) relating to consumption, and the third factor resided (4 items) about confidence.

Table 4.3. *Statements of Social Media Disinformation Scale and Their Factor Loadings*

Items	Statement	Factor Loadings		
		1	2	3
	Sharing			
12.	People on my SNS often receive information related to the crisis from my account.	.863		
11.	I often rebroadcast information I receive about the crisis.	.842		
9.	I share all crisis information on SM.	.783		
10.	I choose the information related to the crisis that I share.	.579		
	Consumption			
2.	People who are part of my SNS disseminate information about the crisis.		.825	
3.	All news regarding the crisis is accessible to me from my SNS		.809	
1.	I am looking for news about the Sudanese crisis on SNS.		.673	
4.	I never worry about finding information about the crisis from SM		.595	
	Confidence			
8.	I never trust information posted on SM about the crisis.			-.686
7.	The information disseminated on SNS about the crisis is credible to me.			.685
5.	I trust the information disseminated on SNS about the crisis.			.657
6.	News on SM about the crisis is credible in its majority.			.604

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Bartlett's Test of Sphericity was also used in the scale of SM disinformation, it was extremely significant. Consequently, the factor analysis results are appropriate. Based on the initial eigenvalue utilizing the Principal Component Analysis (PCA) and the Rotation Method of Varimax with Kaiser Normalization, the following three factors emerged:

1- Sharing: activities regarding rebroadcasting the received information about the crisis, sharing all crisis information on SM, choosing the information related to the crisis when sharing it, and people on SNSs receiving information about the crisis from my account.

2- Consumption: People who are part of my SNSs disseminate information about the crisis, all news regarding the crisis is accessible on SNSs, looking for news about the Sudanese crisis on social networks, never worrying about finding information about the crisis from SM.

3- Confidence: trusting information on SM about the crisis, credibility of the information disseminated on SNSs, and credibility of the news on SM about the crisis in its majority.

4.1.4. Convergent Validity

Pearson's coefficient of association was calculated to determine the significance levels between scale factors, and it showed higher levels of substantial positive associations across all categories of the SMU scale (Academic, Socializing, Informativeness, Entertainment, and Reliability) with the overall score of SMU. The correlation of these extents and the entire scores were calculated and identified as .640 to .869, indicating convergent validity of the scale of SMU.

Table 4.4. *Convergent Validity of Social Media Use Scale*

	Overall	Academic	Socialization	Entertainment	Informative	Reliability
Overall	1					
Academic	.822**	1				
Socialization	.869**	.586**	1			
Entertainment	.774**	.517**	.608**	1		
Informative	.718**	.422**	.563**	.451**	1	
Reliability	.640**	.381**	.514**	.406**	.569**	1

**. Correlation is significant at the 0.01 level.

Pearson's coefficient of correlation was calculated to determine the significance levels between factors of the SM disinformation scale, and it showed higher levels of substantial positive associations for all dimensions of the SM disinformation scale (Consumption, Confidence, and Sharing) with the overall score of SMU. The association between these extents and the overall scores was calculated and identified as .790 to .858, indicating convergent validity of the scale of SM disinformation.

Table 4.5. *Convergent Validity of Social Media Disinformation Scale*

	Overall	Consumption	Confidence	Sharing
Overall	1			
Consumption	.790**	1		
Confidence	.855**	.564**	1	
Sharing	.858**	.456**	.624**	1

**. Correlation is significant at the 0.01 level.

4.2. Descriptive Statistical Analysis

4.2.1. Demographic Data

Participants were asked a total of 5 demographic questions, including gender, age, education level, university name, and faculty name. The demographic data that were utilized for analyses in this research include (a) gender (i.e., female, male); (b) age (i.e.,

groups according to age categories (17-21, 22-26, 27-31, 32-36, and 37+ years); (c) education level (i.e., Bachelor, Master, PhD). A total of 355 university students completed the questionnaire. Given the focus of this research on Sudanese university students, only participants who indicated that they were studying in Sudan were included in the data analysis. This led to the removal of 37 students who stated that they were not studying in Sudan. Therefore, the final sample was 318 participants.

Table 4.6. *Participant's Characteristics (n=318)*

Demographic Variable	Value	Frequency	n (%)
Gender	Male	182	57.2
	Female	136	42.8
Age	17-21	84	26.4
	22-26	92	28.9
	27-31	73	23.0
	32-36	53	16.7
	37 +	16	5.0
Educational level	BSc	239	75.2
	MSc	46	14.5
	PhD	33	10.4

4.2.1.1. Gender Distribution

Demographically, the participants varied in gender, age, education level, university, and faculty. The final sample consisted of 318 university students. Of the 318 participants included in this study, (n=182, 57.2%) of them were male students, and (n=136, 42.8%) of them were female students. The most common age groups were 22-26 years (n=92, 28.93%), and 17-21 years (n=84, 26.4%). Of those who responded to the demographic question related to education level, most of them indicated they were Bachelor students (n=239; 75.2%), and (n=46; 14.5%) of the participants were Masters students, and the remaining participants (n=33; 10.4%) were Doctorate students.

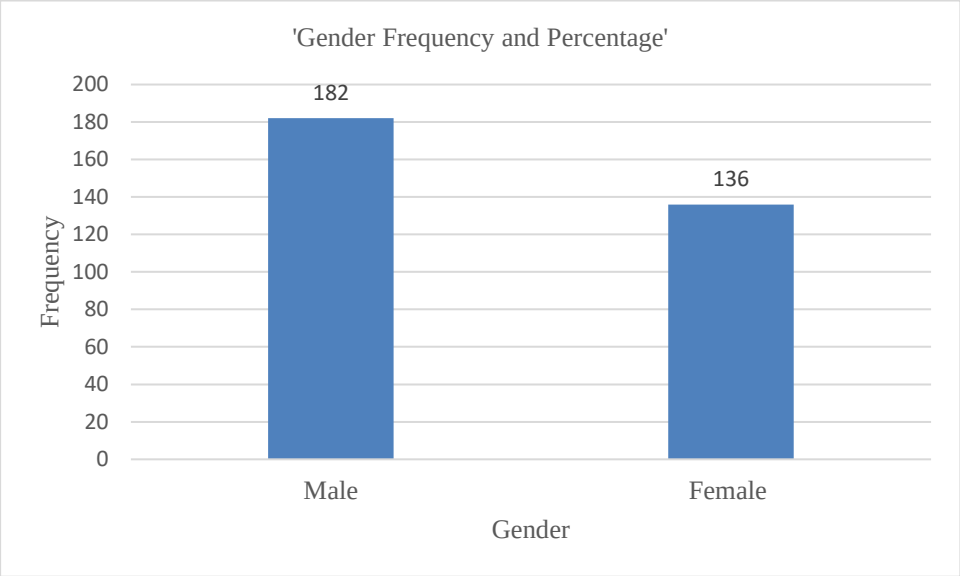

Figure 4.1. *Gender Frequency and Percentage*

4.2.1.2. Age Distribution

Age classification of those who were involved in the survey are from 17-21 years old (26,4%), 22–26 years old (28.9%), 27 – 31 years old (22.9%), 32–36 years old (16,6%), and 37 years and above (5%). A large part of the participants was noted from the age groups of 17–21 years and 22–26 years.

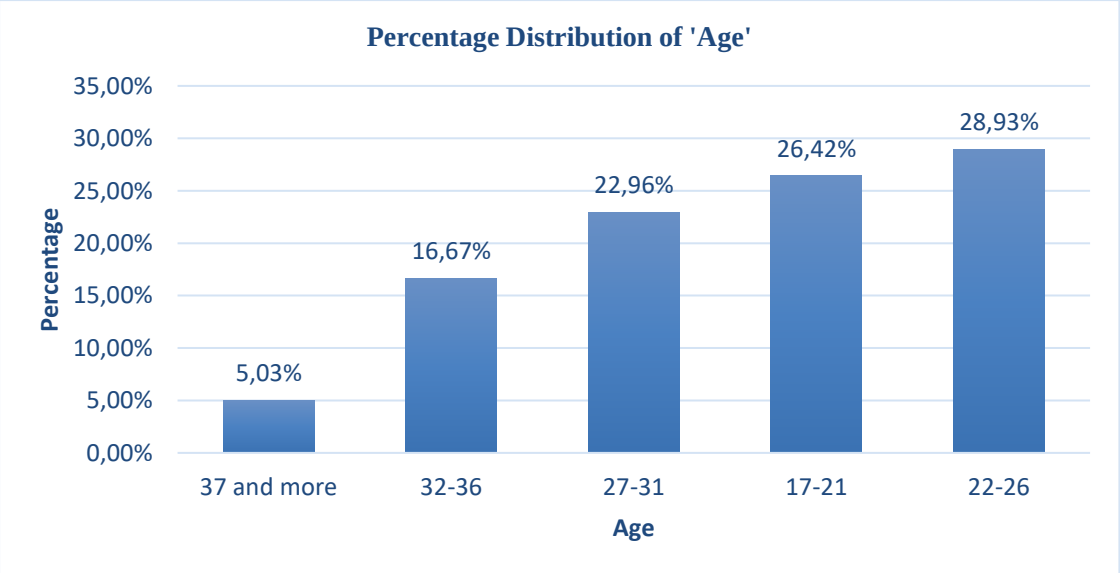

Figure *4.2.* Distribution of Age

4.2.1.3. Education Level Distribution

The distribution of the participants' education indicated that of 318 participants 239 participants were Bachelor students, 45 participants were Master students, and 32 participants were Ph.D. students. Most of the questionnaire participants were bachelor's students.

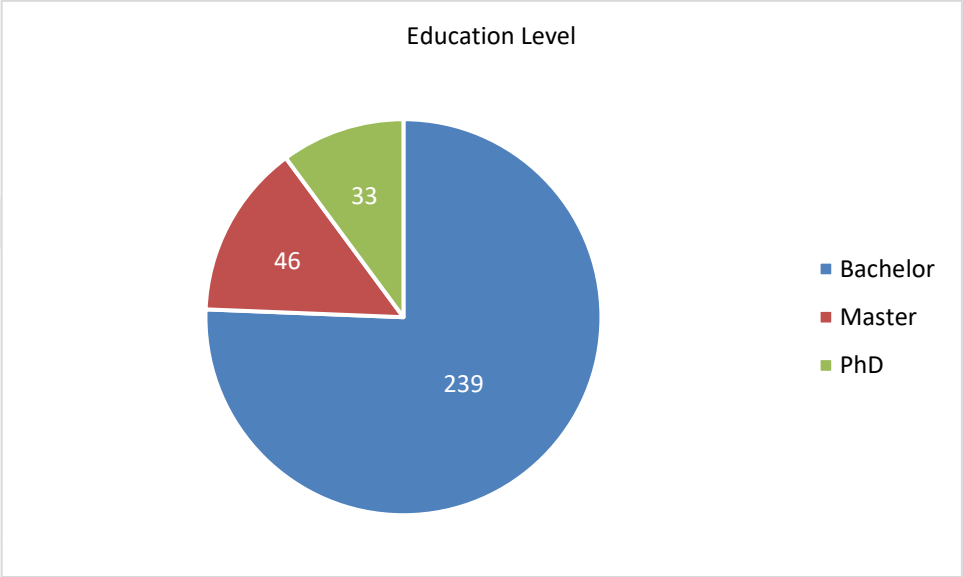

Figure 4.3. *Education Level*

4.2.2. The Internet Access

Regarding participants' responses to the question of accessing the Internet, of the 318 participants included in this study, 280 participants (88.1%) were accessing the Internet using mobile data, 110 participants (34.6%) were accessing the Internet using wireless, while 48 participants (15.1%) had access to high-speed internet, 27 participants (8.5%) had wired broadband, and no participants had dial-up connections.

Table 4.7. *Internet Access*

Access the Internet (n=318)	Frequency	Percentage
Mobile Data	280	88.1
Having access to high-speed internet	48	15.1
Wired broadband	27	8.5
Wireless	110	34.6
Dial-up connections	0	0.0

4.2.3. Types of Electronic Devices

Relating to the types of electronic devices students have, 288 participants (90.6%) have smartphones, 179 participants (56.3%) have personal computers (laptops), 39 participants (12.3%) have desktop computers, 30 participants (9.4%) have simple cell phones without web access, and 10 participants (3.1%) using other electronic devices.

Table 4.8. *Types of Electronic Devices*

Types of Electronic Devices (n=318)	Frequency	Percentage
Simple cell phone (without web access)	30	9.4
Smartphone	288	90.6
Personal computer (desktop)	39	12.3
Personal computer (laptop)	179	56.3
Other	10	3.1

4.2.4. Pattern of Social Media Use

Regarding the pattern of SMU, of the 318 participants involved in this study, 236 participants (74.2%) have 4 or more accounts on SNSs, 50 participants (15.7%) have 3 accounts, 20 participants (6.3%) have 2 accounts, and only 4 participants (1.3%) have 1 account on SNSs. As much as (96.2%) of participants have a profile on WhatsApp, 94.7% have a Facebook account, followed by Instagram (81.8%), X (formerly Twitter) (65.1%), TikTok (55.3%), Snapchat (42.5%), and others (26.7%). It can be stated that participants mostly use WhatsApp during the crisis time, followed by Facebook and Instagram, X (Twitter), TikTok, and Snapchat.

Table 4.9. *Pattern of Social Media Use (n=318)*

SMU (n=318)	Frequency	Percentage
Number of SM accounts		
1	4	1.3
2	20	6.3
3	50	15.7
4 or more	236	74.2
I don’t know	8	2.5
Profiles on SM		
Facebook	301	94.7
X (formerly Twitter)	207	65.1
Instagram	260	81.8
WhatsApp	306	96.2
Snapchat	135	42.5
TikTok	176	55.3
Other	85	26.7

4.2.5. Frequency of Social Media Usage During Crisis

Pertaining to the frequency of SMU during crisis time 172 of the participants (54.1%) indicated they were using SM multiple times a day, 118 of them (37.1%) used it daily, 18 of them (5.7%) used it multiple times a week, 6 of them (1.9%) used it weekly, 2 of them (0.6) used it monthly, and 2 of the participants (0.6%) have never used SM during crisis times. It can be stated that more than half of the respondents (54.1%) have utilized SM multiple times a day during the crisis. Regarding time spent on SM during the crisis 37.7% of respondents spent 4 hours or more per day on SM, followed by (24.4%) spent 1-2 hours, (20.1%) spent 3-4 hours, (16.4) spent 2-3 hours, and (1.6%) spent less than 1 hour per day.

Table 4.10. *Frequency of Social Media Use During the Crisis (n=318)*

Frequency of SMU during the crisis	Frequency	Percentage
Frequency of SM use during the crisis		
Multiple times a day	172	54.1
Daily	118	37.1
Multiple times a week	18	5.7
Weekly	6	1.9
Monthly	2	0.6
Never	2	0.6
Time spent on SM		
Less than 1 hour	5	1.6
1-2 h	77	24.2
2-3 h	52	16.4
3-4 h	64	20.1
4 or more hours	120	37.7

4.2.6. Trust in Information Sources

Regarding the question of how much the students trust information from sources such as (television, newspaper, radio, SM, and celebrities and influencers of SM), the findings disclosed that while the participants had little trust in television (M=2.6, SD=1.8), newspapers (M=2.4, SD=1.7), and radio (M=2.4, SD=1.8), they had moderate trust in celebrities and SM influencers (M=2.9, SD=1.9), and SM (M=3.2, SD=1.8).

Table 4.11. *Trust in Information Sources*

Information source	VLT (%)	2 (%)	3 (%)	4 (%)	5 (%)	6 (%)	GDT (%)	Mean (SD)
Television	118 (37.1%)	75 (23.6%)	42 (13.2%)	28 (8.8%)	24 (7.5%)	10 (3.1%)	21 (6.6%)	2.6 (1.8)
Newspapers	141 (44.3%)	65 (20.4%)	44 (13.8%)	23 (7.2%)	19 (6.0%)	9 (2.8%)	17 (5.3%)	2.4 (1.7)
Radio	141 (44.3%)	70 (22.0%)	44 (13.8%)	18 (5.7%)	15 (4.7%)	14 (4.4%)	16 (5.0%)	2.4 (1.8)
SM	72 (22.6%)	52 (16.4%)	79 (24.8%)	46 (14.5%)	28 (8.8%)	16 (5.0%)	25 (7.9%)	3.2 (1.8)
Celebrities and SM influencers	93 (29.2%)	68 (21.4%)	45 (14.2%)	52 (16.4%)	17 (5.3%)	23 (7.2%)	20 (6.3%)	2.9 (1.9)

Note: VLT= Very Little Trust, GDT= A Great Deal of trust

4.2.7. Frequency of Using Information Sources

In relation to the frequency of using information sources to obtain information about the crisis, the students never used newspapers (M=1.5, SD=1.2) and radio (M=1.5, SD=1.0) to follow information related to the crisis. Also, they very rarely used television (M=2.4, SD=1.7) to obtain information about the crisis. Whereas the students occasionally used celebrities and SM influencers (M=3.5, SD=2.0) to follow information about the crisis. Besides, they sometimes used (M=4.5, SD=2.0) SM to obtain information regarding the crisis.

Table 4.12. *Frequency of Using Information Sources*

Frequency of using sources	N (%)	VR (%)	R (%)	OC (%)	ST (%)	O (%)	VO (%)	Mean (SD)
Television	131 (41.2%)	85 (26.7%)	39 (12.3%)	25 (7.95)	13 (4.1%)	8 (2.5%)	17 (5.3%)	2.4 (1.7)
Newspapers	233 (73.3%)	48 (15.1%)	19 (6.0%)	6 (1.9%)	3 (.9%)	4 (1.3%)	5 (1.6%)	1.5 (1.2)
Radio	233 (73.3%)	48 (15.1%)	18 (5.7%)	12 (3.8%)	1 (.3%)	4 (1.3%)	2 (.6%)	1.5 (1.0)
SM	26 (8.2%)	31 (9.7%)	45 (14.2%)	70 (22.0%)	36 (11.3%)	12 (3.8%)	98 (30.8%)	4.5 (2.0)
Celebrities and SM influencers	62 (19.5%)	59 (18.6%)	58 (18.2%)	40 (12.6%)	32 (10.1%)	20 (6.3%)	47 (14.8%)	3.5 (2.0)

Note: N= Never, VR= Very rarely, R=rarely, OC= Occasionally, ST= Sometimes, O=Often, VO= Very Often

4.2.8. Association Between Participants Gender and Social Media Use

The research used a Chi-square test of independence (a test of association) to identify whether the variables of participants' gender and SMU are related or not. The

study results indicated that male students (n=177, 97.3%) use Facebook more than female students (n=124, 91.2%). Also, the below table shows that male students (n=137, 75.3%) use X (formerly Twitter) more than female students (n=70, 51.5%). It can be declared that there was a significant distinction between male and female students in using Facebook and X (formerly Twitter). There was no significant difference in using Instagram, WhatsApp, Snapchat, and TikTok between male and female students.

Table 4.13. *Association Between Participants' Gender and Social Media*

		Gender				X^2	P. value
		Male		Female			
		n	%	n	%		
Facebook	N-U	5	2.7%	12	8.8%	5.679	0.017*
	U	177	97.3%	124	91.2%		
X (formerly Twitter)	N-U	45	24.7%	66	48.5%	19.411	0.000*
	U	137	75.3%	70	51.5%		
Instagram	N-U	29	15.9%	29	21.3%	1.516	0.218
	U	153	84.1%	107	78.7%		
WhatsApp	N-U	6	3.3%	6	4.4%	0.267	0.606
	U	176	96.7%	130	95.6%		
Snapchat	N-U	111	61.0%	72	52.9%	2.064	0.151
	U	71	39.0%	64	47.1%		
TikTok	N-U	84	46.2%	58	42.6%	0.387	0.534
	U	98	53.8%	78	57.4%		
Others	N-U	138	75.8%	95	69.9%	1.417	0.234
	U	44	24.2%	41	30.1%		

U: Users, N-U: Non-Users,

4.2.9. Association Between Participants' Age and Social Media Use

Regarding the correlation between SMU and the age of participants, the table below illustrates that the students age group between (17-21) are more likely to use Snapchat (n=49, 58.3%) and TikTok (n=56, 66.7%) than other age groups. The age group of students who are older than 37 years is the least group that uses Snapchat (n=4, 25.0%) and TikTok (n=6, 37.5%). Consequently, it can be stated that there was a considerable difference in using Snapchat and TikTok among age groups of students. There was no substantial distinction in using Instagram, WhatsApp, Facebook, and X (formerly Twitter) among different age groups of students.

Table 4.14. *Association Between Age of Participants and Social Media Use*

		Age					X^2	P. value
		17-21	**22-26**	**27-31**	**32-36**	**37 +**		
Facebook	N-U	8 (9.5%)	7 (7.6%)	1 (1.4%)	0 (0.0%)	1 (6.2%)	9.128	0.058
	U	76 (90.5%)	85 (92.4%)	72 (98.6%)	53 (100.0%)	15 (93.8%)		
X (formerly Twitter)	N-U	29 (34.5%)	30 (32.6%)	25 (34.2%)	21 (39.6%)	6 (37.5%)	.799	0.939
	U	55 (65.5%)	62 (67.4%)	48 (65.8%)	32 (60.4%)	10 (62.5%)		
Instagram	N-U	7 (8.3%)	21 (22.8%)	16 (21.9%)	9 (17.0%)	5 (31.2%)	9.360	0.053
	U	77 (91.7%)	71 (77.2%)	57 (78.1%)	44 (83.0%)	11 (68.8%)		
WhatsApp	N-U	2 (2.4%)	4 (4.3%)	5 (6.8%)	1 (1.9%)	0 (0.0%)	3.581	0.466
	U	82 (97.6%)	88 (95.7%)	68 (93.2%)	52 (98.1%)	16 (100.0%)		
Snapchat	N-U	35 (41.7%)	53 (57.6%)	49 (67.1%)	34 (64.2%)	12 (75.0%)	14.352	0.006*
	U	49 (58.3%)	39 (42.4%)	24 (32.9%)	19 (35.8%)	4 (25.0%)		
TikTok	N-U	28 (33.3%)	41 (44.6%)	42 (57.5%)	21 (39.6%)	10 (62.5%)	11.861	0.018*
	U	56 (66.7%)	51 (55.4%)	31 (42.5%)	32 (60.4%)	6 (37.5%)		
Others	N-U	58 (69.0%)	69 (75.0%)	57 (78.1%)	40 (75.5%)	9 (56.2%)	4.266	0.371
	U	26 (31.0%)	23 (25.0%)	16 (21.9%)	13 (24.5%)	7 (43.8%)		

U: Users, N-U: Non-Users

4.2.10. Association Between Education Level and Social Media Use

Pertaining to the relation between SMU and the education level of participants, the table indicated that bachelor's students are more likely to utilize Snapchat (n=109, 45.6%) and TikTok (n=143, 59.8%) than other age groups. The master's students are the least students who use Snapchat (n=19, 41.3%) and TikTok (n=17, 37%). Consequently, it can be reported that there was a significant distinction in using Snapchat and TikTok among students' educational levels. There was no significant distinction in using Instagram, WhatsApp, Facebook, and X (formerly Twitter) among different levels of education.

Table 4.15. *Association Between Education Level and Social Media Use*

		Educational level						X^2	P. value
		BSc		MSc		PhD			
		n	%	n	%	n	%		
Facebook	N-U	16	6.7%	1	2.2%	0	0.0%	3.638	0.162
	U	223	93.3%	45	97.8%	33	100.0%		
X (formerly Twitter)	N-U	79	33.1%	15	32.6%	17	51.5%	4.474	0.170
	U	160	66.9%	31	67.4%	16	48.5%		
Instagram	N-U	41	17.2%	11	23.9%	6	18.2%	1.182	0.554
	U	198	82.8%	35	76.1%	27	81.8%		
WhatsApp	N-U	8	3.3%	3	6.5%	1	3.0%	1.127	0.569
	U	231	96.7%	43	93.5%	32	97.0%		
Snapchat	N-U	130	54.4%	27	58.7%	26	78.8%	7.092	0.029*
	U	109	45.6%	19	41.3%	7	21.2%		
TikTok	N-U	96	40.2%	29	63.0%	17	51.5%	8.870	0.012*
	U	143	59.8%	17	37.0%	16	48.5%		
Other	N-U	177	74.1%	34	73.9%	22	66.7%	.820	0.664
	U	62	25.9%	12	26.1%	11	33.3%		

U: Users, N-U: Non-Users

4.2.11. Students' Motivations for Using Social Media

The descriptive analysis of the SM scale uncovered that the highest factor was the factor of informativeness (M=3.7), followed by the factors of socializing (M=3.5), academic (M=3.5), and entertainment (M=3.5). In contrast, the lowest factor was verifying information sources (M=3.2).

Table 4.16. *Students' Motivations for Using Social Media*

SMU reasons	Mean	Std. Deviation
Academic	3.5	0.9
Socializing	3.5	0.9
Entertainment	3.5	1.0
Informative	3.7	1.1
Source Verification	3.2	0.9
Overall	3.5	0.8

4.2.12. Disinformation on Social Media

The descriptive analysis of the SM disinformation scale disclosed that the highest factor was the factor of consumption (M=3.7), followed by the factors of sharing (M=2.9), and confidence (M=2.9). The students' behavior of consumption is higher than confidence and sharing of information related to the crisis. The consumption dimension examines the extent to which crisis information is consumed via SM. The confidence dimension measures users' beliefs, confidence, and trust in crisis-related information disseminated on SM. The sharing dimension details how people interact with such news.

The consumption factor indicates that the students consume SM by looking for news about the crisis on social networks. They also stated that the people who are part of their SNSs disseminate information about the crisis, and never worry about finding information about the crisis on SM. Furthermore, all crisis-related news is accessible to students on SNSs. This is in line with Guelmami et al., (2021) addiction to SM has increased since it is the most accessible and user-friendly tool for communication and social interaction, leading to excessive news consumption. Information consumption involves a variety of actions and processes, including information seeking and information encounter ("finding without seeking"). The first type of information acquisition is intentional, while information analysis refers to how people stumble upon news without actively seeking it. Also, Heinonen (2013) stated that SM consumers become more active online, they consume, participate, contribute, and share a variety of online information.

Table 4.17. *Disinformation on Social Media*

Disinformation on SM	Mean	Std. Deviation
Consumption	3.7	0.8
Confidence	2.9	0.7
Sharing	2.9	1.0
Overall	3.2	0.7

4.2.13. Comparison of Students' Motivations and Their Gender

The descriptive analysis of the students' motivations for using SM and their gender specified that there were substantial distinctions between the students' gender and their motivations for using SM, since the female students' academic (M=3.6) and entertainment (M=3.6) motivations are higher than male students' motivations for using SM. However, there were no significant differences regarding their motivations for socialization, informativeness, and verifying information sources.

Table 4.18. *Comparison of Students' Motivations and Their Gender*

	Gender		P. value
	Male (n=182)	Female (n=136)	
Academic	3.4 ± 0.9	3.6 ± 0.9	0.016*
Socialization	3.5 ± 0.9	3.6 ± 0.9	0.079
Entertainment	3.4 ± 1.0	3.7 ± 0.9	0.044*
Informativeness	3.8 ± 1.1	3.7 ± 1.1	0.837
Source Verification	3.2 ± 0.9	3.2 ± 1.0	0.769
Overall	3.4 ± 0.8	3.6 ± 0.8	

**. significant at the 0.05 level.*

4.2.14. Comparison of Students' Motivations and Their Ages

The descriptive analysis of the students' motivations for using SM and their age indicated that there were substantial distinctions between the age of the students in academic (M=3.7) and entertainment (M=3.7) motivations for using SM since the academic and entertainment motivations of the students aged between (17-21) are higher than other age groups. There were no major distinctions in motivations for socialization, informativeness, and verifying information sources between age groups.

Table 4.19. *Comparison of Students' Motivations and their Ages*

	Age					P. value
	17-21 (n=84)	22-26 (n=92)	27-31 (n=73)	32-36 (n=53)	37 + (n=16)	
Academic	3.7 ± 0.9	3.5 ± 0.9	3.3 ± 0.9	3.4 ± 0.9	3.2 ± 0.9	0.042*
Socialization	3.7 ± 0.9	3.4 ± 0.8	3.4 ± 0.9	3.8 ± 0.9	3.3 ± 0.9	0.034
Entertainment	3.7 ± 0.9	3.5 ± 0.9	3.4 ± 0.9	3.7 ± 1.0	2.8 ± 0.9	0.008*
Informativeness	3.8 ± 1.2	3.7 ± 1.1	3.5 ± 1.1	4.1 ± 0.9	3.5 ± 1.1	0.075
Sources Verification	3.2 ± 1.0	3.1 ± 0.9	3.1 ± 0.9	3.4 ± 1.0	3.1 ± 0.8	0.353
Overall	3.7 ± 0.8	3.5 ± 0.7	3.4 ± 0.8	3.7 ± 0.8	3.2 ± 0.7	0.020*

**. significant at the 0.05 level.*

4.2.15. Comparison of Students' Motivations and Education Level

The descriptive analysis of students' motivations for using SMia and their education level demonstrated a significant difference between students' education levels in academic motivations for using SM. Since the academic motivations of the bachelor students (M=3.6) are higher than master (M=3.1) and doctoral (M=3.4) students. Whereas there were no significant distinctions between students' education levels in motivations for socialization, informativeness, entertainment, and source verification.

Table 4.20. *Comparison of Students' Motivations and Education Level*

	Education level			P. value
	BSc (n=239)	MSc (n=46)	PhD (n=33)	
Academic	3.6 ± 0.9	3.1 ± 0.8	3.4 ± 0.9	0.001*
Socialization	3.5 ± 0.9	3.6 ± 0.8	3.7 ± 0.8	0.607
Entertainment	3.6 ± 1.0	3.4 ± 0.9	3.4 ± 1.1	0.323
Informativeness	3.8 ± 1.1	3.8 ± 0.9	3.6 ± 1.0	0.784
Sources Verification	3.2 ± 1.0	3.2 ± 0.7	3.1 ± 0.9	0.943
Overall	3.6 ± 0.8	3.4 ± 0.7	3.5 ± 0.8	0.312

**. significant at the 0.05 level.*

4.3. Thematic Analysis

The qualitative thematic analysis was employed to analyze the data gathered from the open-ended question within the questionnaire. The students were questioned about their main reasons for using SM during the crisis. The open-ended question was developed to support and strengthen the quantitative data, acquire diversity in the collected data, and gain a deep understanding of students' motives for using SM. The qualitative data analysis software NVIVO (Version 12) was utilized to analyze the replies of the students to the open-ended question. The qualitative data obtained from the open question was analyzed by the method of thematic analysis. The data was organized and collected beneath eight main themes namely, academic reasons, communication and socialization reasons, entertainment reasons, news and information reasons, business and professional reasons, personal development reasons, technological reasons, and other reasons.

A deductive analysis method was used to approach the data through some predetermined themes expected to be found based on the uses and gratification theory, these expected themes were (information, entertainment, social interaction, and personal identity). A deductive analysis is approaching the data with certain predetermined ideas that you anticipate seeing reflected there, based on theory or prior knowledge (Braun and Clarke, 2006). A deductive approach can be utilized as the beginning point which enables analyzing data relating to the themes that have emerged from the literature conducted for the research questions designed for the study. However, each of the related or interesting information (themes) rising from the data can be also considered. Even the unexpected themes can be considered to achieve a better comprehension of the phenomenon. Consequently, when analyzing data a great number of inductive codes may emerge (Dawadi, 2021).

4.3.1. Main themes and their frequencies

According to the thematic analysis of the participants' motives for using SM during the crisis, the findings of the research have categorized themes into eight main themes: "academic reasons", "communication and socialization reasons", "entertainment reasons", "news and information reasons", "business and professional reasons", "self-development reasons", "technological reasons" and "other reasons".

Table 4.21. *Main Themes and Its Frequencies*

Themes	f
Communication and Socialization Reasons	190
News and Information Reasons	172
Entertainment Reasons	98
Academic Reasons	85
Technological Reasons	54
Self-development Reasons	16
Business and Professional Reasons	15
Other Reasons	10

4.3.1.1.Communication and Socialization Reasons Theme and its Sub-themes

Under the main theme of communication and socialization reasons, many sub-themes were identified such as communication with family, friends, and relatives, communication, and connectivity, making the world a small village, and documenting life's moments. Also, under the socialization reasons many reasons emerged such as social networking, learning about other cultures and traditions, meeting new people, and creating online identities. It can be stated that the most common reason under communication and socialization themes was using SM to contact family, friends, and relatives (Table 2).

Table 4.22. *Communication and Socialization Reasons Theme and Its Sub-themes*

Themes	f
Communication and Socialization Reasons	190
Communication with family, friends, and relatives	91
Socialization	46
Social networking	31
Learning about other cultures and traditions	10
Meeting new people	4
Creating online identities	1
Communication and connectivity	45
Making the world a small village	7
Documenting life's moments	1

4.3.1.2.News and Information Reasons Theme and its Sub-themes

Regarding news and information reasons for SMU, the participants indicated several reasons and motivations such as accessing news and information about the crisis, staying informed about what's going on around the world, staying up to date with news and current events, disseminating and sharing information, ease of accessing information, following social news, verifying the trustworthiness of information and news, following

economic news, finding facts, ensuring the authenticity and accuracy of the news. It can be asserted that most of the respondents utilized SM to access news and information about the crisis.

Table 4.23. *News and Information Reasons Theme and Its Sub-themes*

Themes	f
News and Information Reasons	172
Accessing news and information about the Crisis	90
Staying informed about what's going on around the world	35
Staying up to date with news and current events	27
Disseminating and sharing information	7
Ease of accessing information	6
Social news	2
Verifying the trustworthiness of information and news	2
Economic news	1
Finding facts	1
Ensuring the authenticity and accuracy of the news	1

4.3.1.3.Entertainment Reasons Theme and its Sub-themes

Regarding the entertainment theme participants showed various reasons for SMU, for instance, having fun, filling spare time, happiness, laughing, watching comic videos, relieving stress, and practicing hobbies such as cooking, art, listening to podcasts, shopping, and sports.

Table 4.24. *Entertainment Reasons Theme and Its Sub-themes*

Themes	f
Entertainment Reasons	98
Entertainment	53
Filling spare time	16
Having fun	11
Happiness	1
Laughing	1
Watching comic videos	1
Hobbies	9
Art	1
Cooking	2
Listening to podcasts	1
Shopping	2
Sports	3
Relieving stress	9

4.3.1.4.*Academic Reasons Theme and its Sub-themes*

The main theme of academic reasons for SMU encompasses sub-themes about education, and academic skills such as conducting scientific research, developing academic skills, learning skills, and solving academic problems. Also, it includes sub-themes about learning such as academic learning, acquiring knowledge, facilitating self-learning, learning languages, looking for scholarships, and studying.

Table 4.25. *Academic Reasons Theme and Its Sub-themes*

Themes	**f**
Academic Reasons	85
Academic skills	12
Conducting scientific research	8
Developing academic skills	1
Learning skills	1
Solving academic problems	2
Learning	62
Academic learning	30
Acquiring knowledge	14
Facilitating self-learning	1
Learning languages	1
Looking for scholarships	3
Education	11

4.3.1.5.Business and Professional Reasons Theme and Its Sub-themes

The main theme of business and professional reasons contained different sub-themes such as: buying and selling products, doing business, finding customers, finding professional opportunities, finding services, professional development, and providing solutions for problems.

Table 4.26. *Business and Professional Theme and Its Sub-themes*

Themes	f
Business and Professional Reasons	15
Professional development	6
Finding professional opportunities	3
Doing business	2

Table 4.26. (Continued) *Business and Professional Theme and Its Sub-themes*

Buying and selling products	1
Finding customers	1
Finding services	1
Providing solutions for problems	1

4.3.1.6.Technological Reasons Theme and Its Sub-themes

Regarding the main theme of technological reasons, participants mentioned a variety of reasons for SMU including becoming an alternative to traditional media, availability, cheap communication means, diversity of SM, diversity of the content, ease of using SM, effective tool, fast medium, freedom of choosing the content, making life easier, necessity, no restrictions, the absence of traditional media.

Table 4.27. *Technological Reasons Theme and Its Sub-themes*

Themes	F
Technological Reasons	54
Ease of using SM	11
Fast medium	7
Availability	6
Effective tool	6
Necessity	5
Diversity of SM	4
Alternative to traditional media	3
Diversity of the content	3
No restrictions	3
Cheap communication means	2
Making life easier	2
Freedom of choosing the content	1
The absence of traditional media	1

4.3.1.7.Self-development Reasons Theme and Its Sub-themes

The main themes and sub-themes of the participants' views related to self-development reasons were summarized as self-development, acquiring personal skills, and increasing abilities. The most frequent reason under this theme was self-development.

Table 4.28. *Self-development Reasons Theme and Its Sub-themes*

Themes	f
Self-development Reasons	16
Personal development	12
Acquiring personal skills	3
Increasing abilities	1

4.3.1.8.Other Reasons Theme and Its Sub-themes

Besides the above-mentioned themes, the participants also indicated other reasons and motivations for SMU during the crisis, and these reasons were categorized under the theme of *other reasons*. This theme comprised sub-themes such as addiction, fighting moral corruption, lack of trust in traditional media, taking advantage of SM, and I don't know.

Table 4.29. *Other Reasons Theme and Its Sub-themes*

Themes	f
Other Reasons	10
Addiction	4
Fighting moral corruption	1
Lack of trust in traditional media	1
Taking advantage of SM	3
I don't know	1

4.1.1. Word Frequency

Word frequency analysis was conducted to identify how often each word comes out in the qualitative data collected from the answers to the open question. It assists in determining the most frequent words and their frequencies. The word frequency query results showed that the five most frequent words were as follows: news (f=89) followed by communicate (f=68), friends (f=57), family (f=44), and information (f=44). The word frequency result emphasized that most of the respondents used SM to access news and information about the crisis and to communicate with their family, friends, and relatives because the result of the word frequency is in line with the results of the thematic analysis

which indicated that most frequent themes were the theme of news and information reasons and the theme of communication and socialization reasons.

Figure 4.4. *Word Frequency*

5. DISCUSSIONS, RECOMMENDATIONS, AND CONCLUSIONS,

5.1. Discussions

The present study intends to investigate and describe the current state of SMU among Sudanese university students' during crisis times and to understand their motivations for using SM. Also, the research intends to debate if these motives agree with the four motivating needs (entertainment, personal identity, information, and social interaction) proposed by McQuail (1994). The findings and conclusions derived from the descriptive and thematic analyses are discussed in this section as well as recommendations. Following the data analysis conducted in Chapter 4th, discussion and connections were made between the study's results and the existing literature. Conclusions related to the study questions were reported also in this chapter.

The research depends on a wide literature review of research measuring SMU in various areas of education and crisis contexts. The study presents the method conducted to assess the SMU by Sudanese university students during the crisis. The scales used in this study not only have sufficient statistical support but also, have an adequate theoretical framework. The factors of SMU were examined by EFA.

The scale reliability utilized to assess the internal consistency of the structures was measured by Cronbach’s alpha, and the value was 0.906, which is defined as an excellent value. As determined by George and Mallery (2003), the values of Cronbach's Alpha over 0.90 indicate outstanding internal consistency. Principal Components Analysis (PCA) was utilized, and the factors were rotated to facilitate explanation with the rotation method of Varimax with Kaiser normalization, which is the most utilized with the data of the survey, as it leads to more relevant and interpretable factors (Field 2005; p. 630).

5.1.1. Demographic Findings

The demographic findings revealed that participants varied in gender, age, and education level. Of the 318 participants engaged in this research, (n=182) of them were male students, and (n=136) of them were female students. Consequently, the percentage of male students (57.2%) was higher than that of female students (42.8%) among the students who replied to the survey. The most common age groups were 22-26 years (n=92, 28.93%), followed by the 17-21 years (n=84, 26.4%) age group. In this vein, O'Keeffe & Clarke-Pearson (2011) confirmed that using SNSs is among the top common

activities of today's adolescents and children. Also, Park and Avery (2018) stated that demographically, age forecasts demographic preferences for information outlets during crises and crisis types, and age also impacts the relationship between media preference and the intention to follow suggested behaviors. The findings related to education level indicated that (n=239; 75.2%) of the participants were Bachelor students, (n=46; 14.5%) were Masters students, and the remaining participants (n=33; 10.4%) were Doctorate students. Therefore, it can be declared that the majority of the participants were undergraduate students, constituting 75.2% of the total respondents. A thorough literature review showed that the age demographic is significant to acknowledge because it allows the researcher to make comparisons between the respondents' ages and the use of SNSs (Nelson, 2012 as cited in Romano, 2013).

5.1.2. Accessing the Internet

Pertaining to the responses of the participants to the question of accessing the Internet, the findings of the study found that 280 participants (88.1%) were accessing the Internet by using mobile data, 110 participants (34.6%) were accessing the Internet using wireless, 48 participants (15.1%) had access to high-speed internet, 27 participants (8.5%) had wired broadband, and no participants had dial-up connections. Thus, most participants (88.1%) accessed the Internet through mobile data. Also, the findings revealed that 198 participants (62.3%) had only one access to the Internet, and 120 participants (37.7%) had two or more access to the Internet. These findings are in line with the report of Data Reportal (2024) which stated that 91.39% of internet users in Sudan access the internet using mobile phones. While 7.82% of them access the internet using laptop and desktop computers, and 0.78% of web traffic comes from tablet devices.

Regarding the types of electronic devices students had, the findings discovered that 288 participants (90.6%) had smartphones, 179 participants (56.3%) had personal computers (laptops), 39 participants (12.3%) had desktop computers, 30 participants (9.4%) had simple cell phones without web access, and 10 participants (3.1%) using other electronic devices. It can be noted that most of the students had smartphones. The findings also indicated that 116 students (36.5%) had one type of electronic device, and 202 students (63.5%) had more than one type. Consequently, it can be reported that most students had two or more types of electronic devices. As reported by data from GSMA at

the beginning of 2024 there were 29.15 million cellular connections in Sudan. Taking into consideration that many individuals around the world utilize multiple mobile connections – for instance, they may have one connection for private usage and another for business. Also, in this context literature indicated that Internet usage and mobile devices by youths have rapidly risen in the last decade (Livingstone and Smith, 2014), Internet usage and access has increased to roughly 71.4 % while most young individuals between 18–24 years old utilize the internet (Antoniadis, Koukoulis, and Serdaris, 2017. s,100). The Global Statshot Report (2021) also stated that mobile devices are the world's top considerably used devices for accessing the internet and represent a major part of our web time.

5.1.3. Students' Social Media Usage and Adoption During the Crisis

Concerning the students' usage and adoption of SM during the crisis the findings demonstrated that 236 students (74.2%) have 4 or more accounts on SM, 50 students (15.7%) have 3 accounts, 20 participants (6.3%) have 2 accounts, and only 4 participants (1.3%) have 1 account on SM. This indicated that a large percentage of the students (n=311, 98%) had two or more accounts on SM, so it can be argued that most of the students were involved in many several kinds of SNSs. This is consistent with Maeve, Amanda, and Mary (2015) stating that nowadays over 50% of the users of the internet have two or more accounts on SNSs (such as Facebook, Instagram, X (formerly Twitter), LinkedIn, and Pinterest).

Also, regarding the rate of SMU during crises the findings specified that 172 of the students (54.1%) utilized SM multiple times a day, 118 of them (37.1%) used it daily, 18 of them (5.7%) used it multiple times a week, 6 of them (1.9%) used it weekly, 2 of them (0.6) used it monthly, and 2 of the participants (0.6%) have never used SM during crisis times. It can be considered that over half of the participants (54.1%) adopted SM multiple times a day during the crisis. Concerning time expended on SM during the crisis, the study findings showed that 37.7% of respondents spent 4 hours or more per day on SM, followed by (24.4%) spent 1-2 hours, (20.1%) spent 3-4 hours, (16.4) spent 2-3 hours, and (1.6%) spent less than 1 hour per day. It can be noted that most of the students (98.4%) spent two or more hours on SM, this signifies that the students highly used and adopted SM in their everyday lives. In other words, SM occupies considerable hours of

the students' daily lives. These findings were supported by Pressly's findings (2021) which indicated the students' SMU rose during crises since more than half of the students averaged three hours or more daily involved in SM. In line with this, Holmes (2021) also found that teenagers (especially students in the age group between 17-19 years old) and female students indicated spent considerably more time daily on SM than older and male students. This is also consistent with Romano (2013) who stated that social networking is now the most time-consuming activity for an Internet user.

5.1.4. Most Popular Social Media Platforms Amongst Students

The findings revealed that Approximately (96.2%) of students had a profile on WhatsApp, and 94.7% had a Facebook account, followed by Instagram (81.8%), X (formerly Twitter) (65.1%), TikTok (55.3%), Snapchat (42.5%), and others (26.7%). It can be stated that WhatsApp was the students' most used SM platform during the crisis. In this regard, several studies and statistics in the literature also confirmed that students and youngsters are the most frequent users of the Internet and SNSs (ComScore 2013 as cited in Antoniadis, Koukoulis, and Serdaris, 2017, s.100). This agreed with the study findings of Dzandu et al., (2016) which also found that WhatsApp is used and adopted by students extensively since lot of students use WhatsApp more than the other SNSs. Because of instantaneous of communication and rapid dissemination of information regarding the crisis, they found WhatsApp as an effective tool. Also, the government's frequent internet shutdowns for long periods during this crisis could be one of the reasons that led participants to prefer using WhatsApp more than other platforms for messaging and contacting their relatives and friends, as well as obtaining the information regarding the crisis. Minorita & Glenn (2019) also supported these findings by stating that most students utilize social network websites, and the most accepted SNSs amongst students were WhatsApp, followed by Facebook and Instagram respectively.

5.1.5. Social Media Use Across Different Age Groups

Concerning the question of how different age groups interact with SM during crises, the study findings showed that students age group (17 - 21) used Snapchat and TikTok more than the other age groups. Whereas the students aged older than 37 years are the least group that used Snapchat and TikTok. Accordingly, it can be stated that there

was a significant difference in students' use of Snapchat and TikTok among different age groups. There was no substantial difference in using Instagram, WhatsApp, Facebook, and X (formerly Twitter) among different ages of students. Thereby, there is an association between the participants' age and the usage of SM platforms, especially Snapchat and TikTok. This finding is backed up by Avery (2010) who found that age significantly impacted the selection of channels for crisis-related information. Various age groups used diverse sources of crisis information, as the Internet was the most essential source for those between the ages of (18 – 24 years).

Concerning the association between the education level and SMU, the study findings declared that bachelor's students engaged in using Snapchat and TikTok more than other age groups. The master's students were the least who used Snapchat and TikTok. Consequently, it can be argued that there was a substantial distinction in using Snapchat and TikTok among students' levels of education. There was no important distinction in using Instagram, WhatsApp, Facebook, and X (formerly Twitter) among different levels of education. It can be determined that there is an association between the students' education levels and SMU, especially Snapchat and TikTok. Within this framework, Pressly (2021) argued that because crises are usually accompanied by increasing anxiety and stress, students tended to resort to communication and entertainment outlets like Snapchat and TikTok more than they resorted to picture-sharing platforms such as Instagram.

The findings regarding the students' motivations for SMU in comparison to their ages reported that there were substantial differences between the ages of the students in academic and entertainment reasons for SMU. As the academic and entertainment motivations of the students aged between (17 and 21 years) are higher than other age ranges. There were no weighty distinctions in motivations for socialization, informativeness, and verifying information sources between age groups.

The findings comparison relating to the student's motivations for SMU and their education level discovered that there was a meaningful variation between the students' education level in academic motives for SMU. As the academic motivations of the bachelor students are higher than other students. While there were no important distinctions between students' education levels in motivations for socialization, informativeness, entertainment, and source verification.

5.1.6. Trust in Information Sources and Verifying Information

Concerning the question of to what extent students trust information sources the findings showed that the participants had little trust in the information from television, newspapers, and radio. While they had moderate trust in the information from celebrities (influencers) of SM and SM outlets. It can be argued that students trust SNSs and celebrities (influencers) on SM more than conventional media (television, newspaper, radio). In this context, the theory of the two-step flow of communication states that most people obtain information from personal sources rather than the media. This highlights the importance of social groups and opinion leaders in the mediation process (Soffer, 2021). In this regard, several researchers have proposed a multi-step flow of information model, which depicts a more complicated spectrum of possible interactions than the two-step model's downward communication flow from more to less attentive individuals (Robinson, 1976 as cited in Stansberry, 2012). In recent years, Bennett and Manheim (2006) contended that developments in media technology have caused audiences to be so differently classified according to their interests that communications now just move in a "one-step flow" from the sender to the recipient.

Regarding the frequency of using information sources to follow information about the crisis, the students never used newspapers or radio to follow information about the crisis. Also, they used television very rarely to obtain crisis-related information. Whereas they occasionally used celebrities and SM influencers to obtain information about the crisis. Besides, they sometimes used SM to get information regarding the crisis. Consequently, it can be specified that the students depended on celebrities, SM influencers, and SM platforms to acquire information about the crisis. In other words, the students preferred SM and celebrities (influencers) of SM to traditional media with respect of using information sources for following information about the crisis. In online public forums, the two-step flow of communication theory remained effective and powerful as an explanation tool. Opinion leaders proved to be influential, but not content developers (Choi, 2015). In this regard, Stansberry's (2012) study findings revealed that a limited number of major influencers from online communities are critical to information gathering, collation, and diffusion in online, interest-based networks.

In this connection, Kim et al. (2011) investigated undergraduates' use of SNSs as an information source. Their study results disclosed that SNSs such as online user reviews

and Facebook were used frequently by university students to find information. The SMU among the people has formerly proven to increase substantially in cases of crisis and natural catastrophes (Niles et al., 2019). In this context also (McLean & Power, 2013) asserted that during crises, SM users tend to deem SM as a trustworthy and reliable source to obtain information. Westerman et al., (2014) debated that SM has been used growingly as a source of the latest information about what is occurring on the ground during wide-ranging crises, for instance, civil unrest (such as political reform and street riots) and natural disasters. In the context of verifying the trustworthiness of information on SM, most of the students specified that they rarely use SM to share information related to the crisis without checking the source of the information. They verify the information's trustworthiness by looking at other reliable sources to check the validity of the information. Therefore, they are aware of the importance of checking and verifying information before sharing.

5.1.7. Social Media Use Across Gender

To answer the question of the significant differences between students' genders in using SM during the crisis, the research utilized a Chi-square test of independence (a test of association) to identify the association between variables of participants' genders and SMU. The study findings disclosed that males utilize Facebook and X (formerly Twitter) more than female students. Consequently, it can be stated that there was a considerable distinction between the students' genders in using Facebook and X (formerly Twitter). Thus, there is an association between gender and SMU especially (Facebook and X (formerly Twitter)). There was no significant difference in using Instagram, WhatsApp, Snapchat, and TikTok between male and female students. These findings aligned with the results of Mercy (2021) which stated that male students tended to use Facebook, X (formerly Twitter), and WhatsApp, more than female students. On the other hand, females tended to utilize Snapchat, TikTok, YouTube, and Instagram, at a higher percentage than male students. The genders of the students had a major impact on SM adoption since the findings disclosed significant differences between genders of students in the perceived need for the adoption of SM. intriguingly, some considerable gender distinctions have appeared in the literature regarding the education field that found female university students used SM for maintaining relationships more than males

(Krasnova et al., 2017), while males were reported adopting SM more for information motivations (Kim et al., 2014).

Regarding students' reasons for SMU and their gender, the study findings asserted that there were important differences between the students' gender and their motives for SMU during the crisis since the female students' academic and entertainment motivations were higher than male students' motivations for SMU. There were no substantial differences in their motivations for socialization, informativeness, and verifying information sources. Also, some studies investigated the impact of personality characteristics and gender on the individual's SMU (Asterhan & Bouton, 2017; Alkaabi, Albion, & Redmond, 2017;). They disclosed that females tended to use SM for educational interests more than males.

5.1.8. Students' Motivations for Social Media Usage

The findings of the descriptive analysis concerning students' motives for SMU found that the highest motives for SMU were the motivation for informativeness, followed by motivations for socializing, entertainment, and academics. Consequently, it can be stated that the students' main motivations for SMU were following information regarding the crisis and communicating with friends, family, and relatives.

The Informativeness motivations for SMU include activities such as looking for information related to the crisis, following news related to the crisis, checking the information sources for validity by looking at other reliable sources, obtaining information regarding current social events, sharing news about the situation, and keeping in touch with relatives. Academic motivations for SMU include conducting research, learning about curricular aspects, solving academic problems, communicating with friends via SNSs for exam preparation, web-based academic group discussions, collaborative learning, and seeking help from teachers. Socializing motivations for SMU involve activities such as using SNSs to create social identity, become more sociable, strengthen personal relationships, and attend social gatherings. Entertainment motivations for SMU include looking at fun sharing, sharing pictures, watching movies, and relieving academic stress. It can be argued that three of those factors agree with the four motivating needs (entertainment, personal identity, information, and social interaction) proposed by McQuail (1994). In this context, Heinonen (2013) also indicated

that the SM activities of consumers depend on the motivations for their actions, which include social connection, information, and entertainment.

To find in-depth responses concerning the students' reasons and motivations for SMU platforms during the crisis an open question was developed within the questionnaire. The thematic analysis was carried out on the qualitative data gathered from replies to the open question. The data analysis was carried out by using a deductive approach. To perform the thematic analysis the study applied the six stages of the thematic analysis suggested by Braun and Clarke (2006). Following the thematic analysis, the study findings classified the students' reasons and motivations for SMU into eight main themes including "academic reasons", "communication and socialization reasons", "entertainment reasons", "news and information reasons", "business and professional reasons", "self-development reasons", "technological reasons" and "other reasons". In this context, the literature supports the finding since Whiting and Williams's (2013) study findings revealed ten U&G of SMU, which are social contact, seeking information, entertainment, passing time, relaxation, convenience utility, communicational utility, expression of view, information sharing, and surveillance.

Within communication and socializing motivation for SMU, students demonstrated many different reasons including communication with family, friends, and relatives, communication, and connectivity, SM making the world a small village, and documenting life's moments. In addition to social networking, meeting new people, learning about other cultures and traditions, and creating online identities. The findings revealed that the most frequent reason for communication and socializing motivations was using SM to contact family, friends, and relatives.

Concerning news and news and information motivation for SMU, the students mentioned different reasons and motivations such as accessing news and information about the crisis, staying informed about what's going on around the world, staying up to date with news and current events, disseminating and sharing information, ease of accessing information, following social news, verifying the trustworthiness of information and news, following economic news, finding facts, ensuring the authenticity and accuracy of the news. The results illustrated that majority of the participants used SM to access information and news about the crisis.

Regarding the entertainment motivations for SMU, students showed various reasons for SMU, for instance, having fun, filling spare time, happiness, laughing,

watching comic videos, relieving stress, and practicing hobbies such as cooking, art, listening to podcasts, shopping, and sports. The academic motivation for SMU encompasses sub-reasons such as education, academic skills (e.g., conducting scientific research, developing academic skills, learning skills, and solving academic problems), learning (e.g., academic learning, acquiring knowledge, facilitating self-learning, learning languages, looking for scholarships, and studying).

In the framework of business and professional reasons for SMU, different sub-reasons were included such as buying and selling products, doing business, finding customers, finding professional opportunities, finding services, professional development, and providing solutions for problems. While regarding technological reasons for SMU, participants mentioned a variety of reasons for instance becoming an alternative to traditional media, availability of SM, cheap communication means, diversity of SM, diversity of the content, ease of using SM, effective tool, fast medium, freedom of choosing the content, making life easier, necessity, no restrictions, the absence of traditional media. In respect of self-development reasons for SMU, students indicated many reasons such as self-development, acquiring personal skills, and increasing abilities. In addition to the above-mentioned motivations and reasons, the participants indicated other reasons and motivations for SMU during the crisis, including fighting moral corruption, lack of trust in traditional media, and taking advantage of SM, I don't know.

Word frequency analysis was conducted to identify how often each word comes out in the qualitative data collected from the replies to the open question. It assists in determining the most frequent words and their frequencies. The word frequency results showed that the five most frequent words were as follows: news (f=89) followed by communicate (f=68), friends (f=57), family (f=44), and information (f=44). These results confirmed that the students' first gratification desires and motivations for SMU during the crisis were to get the news and information and to communicate with family and friends. This is consistent with the findings of descriptive and thematic analysis.

5.2. Implications and Recommendations

The study findings present unique and significant insights relevant to scholars, researchers, academicians, governments, social scientists, SM and crisis communication researchers, communication administrators, university students, and the public.

Regarding future research, those mentioned above might benefit from this study's findings to understand the students' SMU during the crisis, the students' preferences among these platforms, and motivations for using such platforms during crises, to assist in developing and implementing future's plans, practices, and recommendations related to communication.

There are many significant implications closely related to this study. First, during the crisis, university students reported adopting SM extensively; as a result, and predictably, SM could be a valuable medium for transmitting crisis-related informative messages to youth in times of emergency. It is also possible to benefit from the advantages offered by SM to continue the education and learning process due to the difficulty of moving during crises.

Second, given that most of the students were engaged in many various types of SNSs, and this outcome was confirmed by other important findings indicated in previous literature, where Maeve, Amanda, and Mary (2015) stated that nowadays over half of the users of the internet have two or more accounts on SNSs (such as Instagram, Facebook, X (formerly Twitter), Pinterest, and LinkedIn). Therefore, it could be effective to design different types of messages according to the type of SM content.

Third, the study revealed there were substantial distinctions in students' reasons for SMU based on their gender and age. Therefore, gender differences may take a leading role in interpreting the students' reasons for SMU during crises through different tracks and outcomes. As such, these results could build the basis for future research in SMU amongst university students in times of crisis.

This research has various significant limits. Firstly, the study was descriptive research. Therefore, it is not easy to make cause-and-effect deductions and relationships.

Secondly, the study sampling consisted of Sudanese university students, limiting the findings' generalizability to all segments of Sudanese society. Consequently, it can be recommended further research to target other age segments or populations.

Thirdly, the research utilized a questionnaire to gather the data during the crisis. Using different data collection techniques as in-depth interview or focus groups could be used to collect data, to acquiring diversity in data and results.

To approach the SMU from different perspective further comparative studies also recommended by considering variables such as regions, location, employment, and income level.

The findings of this study recommend scholars, researchers, academicians, governments, social scientists, researchers of SM, and crisis communication administrators to cast more light on the field of SMU by university students since SMU is among the top prevalent activities of today's adolescents and children. The findings also can be used to raise awareness of the significance of verifying the spread of information on SM regarding the crisis.

5.3. Conclusion

In this study, the usage of SM by Sudanese university students during the crisis was investigated. Also, the students' reasons and motivations for SMU during times of crisis were explored. The students' preferences, adoption, and acceptance of these platforms during the crisis were revealed as well. In general terms, the study's results indicated that most of the Sudanese university students (88.1%) accessed the Internet by using mobile internet data. While (62.3%) of them had only one access to the Internet, (37.7%) of them had two or more access to the Internet. Concerning the types of electronic devices students had, the findings demonstrated that the vast majority of the students (90.6%) had smartphones, while (63.5%) of the students had two or more types of electronic devices, (36.5%) of them had one type of electronic device.

Regarding the students' usage and adoption of SM during the crisis, the students heavily used SM during the crisis. Given that, nearly all students (98%) had multiple SM accounts (two or more accounts), in simple words, lot of the students were involved in many varied forms of SNSs. Also, over half of the students (54.1%) reported adopting SM lot of times a day during the crisis. The majority of the students (98.4%) spent two or more hours on SM, this signified that the students highly used and adopted SM in their daily lives and WhatsApp was the top used SM by students during the crisis, because of instantaneous communication and rapid dissemination of information regarding the crisis, and they found WhatsApp as an effective tool.

With respect to students' motives for SMU and its connection with their ages, it could be declared that there were substantial differences between various age groups of the students in respect of academic and entertainment reasons for SMU. As the academic and entertainment motivations of the students aged between (17 and 21 years) are higher than other age ranges.

In respect of trust information sources, the research disclosed that students trust SM platforms and celebrities (influencers) on SM more than conventional media (television, newspaper, radio). Where the students preferred SM and celebrities (influencers) of SM to traditional media when using information sources to follow the crisis-related information. The students declared that they rarely use SM to share crisis-related information without first verifying and checking the source of the information. They examined the trustworthiness of the information by comparing it to other credible sources. As a result, students aware of how important it is to review and verify information before sharing it.

The study revealed there were significant differences in students' SMU (i.e., Facebook and X (formerly Twitter)) based on their gender. Where males adopt Facebook and X (formerly Twitter) more than females. Also, there were significant differences between students' reasons for SMU based on their gender, since the female students' academic and entertainment motivations were higher than male students' motives for SMU.

Eventually, the study found a wide range of motivations and reasons that drive students to utilize SM during the crisis these reasons were news and information reasons, communication and socializing reasons, entertainment reasons, academic reasons, business and professional reasons, self-development reasons, technological reasons, and other different reasons. The findings revealed that the top three reasons for SMU were "news and information", "communication and socializing", and "entertainment" reasons. These reasons and motivations are in line with the four basic needs that drive individuals to utilize media (i.e., entertainment, personal identity, information, and societal interaction) which were proposed by McQuail's model (1994).

The topic of SMU during crises is one of the least researched topics in Sudan, especially in terms of higher education institutions. Consequently, there was scarceness of research on SMU during crises in Sudan. In this context, the present research contributes significantly to the field of SM and crisis research on university students. Additionally, it may add significance to the existing literature as it presents unique findings and discussion in the context of SMU during crises by Sudanese university students.

Generally, the results of this research disclosed that the students highly used SM during crises and they differed in their usage of SM in respect of age and gender. Also,

the research found that the major reasons for SMU were news and information, and contact with family, friends, and relatives. It is believed that this attempt will hopefully assist in improving and enriching knowledge of the existing situation of SMU by university students during crises.

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APPX-1: Questionnaire

Please fill up the following information:

Gender: Male ☐ Female ☐

Age: 17-21 ☐ 22-26 ☐ 27-31 ☐ 32-36 ☐ 37 and more ☐

University _____Faculty_____

Education level: Bachelor ☐ Master ☐ PhD ☐

INSTRUCTIONS

This questionnaire attempts to measure the social networking use by university students during the Sudanese crisis in Khartoum State. The items of the scale are given in statement form. You are requested to carefully read each statement and respond by putting a tick (✓) mark only on that option which you find most appropriate and true in your case. There is no right /wrong answer.

1- How do you access the Internet?

1. Mobile Data ( )
2. Having access to high-speed internet ( )
3. Wired broadband ( )
4. Wireless ( )
5. Dial-up connections ( )

2- What type of electronic devices do you have?

1. Simple cell phone (without web access) ( )
2. Smartphone ( )
3. Personal computer (desktop) ( )
4. Personal computer (laptop) ( )
5. Other ( )

3- How many social media websites do you have a profile on?

1- 1 2- 2 3- 3 4- 4 or more 5- don't know

4- Which social media site do you have a profile on?

Facebook ( ) X (formerly Twitter) ( ) Instagram( ) WhatsApp( ) Snapchat( ) TikTok( ) Other (mention it)

5- How frequently do you use social media websites during Crises?

Multiple times a day ( ) Daily( ) Multiple times a week( ) Weekly( ) Monthly( ) Never( )

6- How many hours a day do you spend on social media?" (The average time you are online on social media every day:

Less than 1 hour ( ) 1~2 h( ) 2~3 h ( ) 3~4 h ( ) 4 or more hours ( )

7- Where do you follow the news about this Crisis?

Social media ( ) Traditional media( ) Both of them( )

8- How often do you watch, read, and hear reports or updates about Crisis on either social media or traditional media?

Once a day ( ) 1-5 times a day( ) 6-10 times a day( ) 11-20 times a day( ) 21-50 times a day( ) More than 50 times a day( ).

9- How often do you seek information about Crisis?

Never [1] [2] [3] [4] [5] [6] [7] Several times a day

10- How much do you trust information about Crisis from the following sources?

Very little trust [1] [2] [3] [4] [5] [6] [7] A great deal of trust

- **Television:** [1] [2] [3] [4] [5] [6] [7]
- **Newspapers:** [1] [2] [3] [4] [5] [6] [7]
- **Radio:** [1] [2] [3] [4] [5] [6] [7]
- **Social media:** [1] [2] [3] [4] [5] [6] [7]
- **Celebrities and social media influencers:** [1] [2] [3] [4] [5] [6] [7]

11- How often do you use the following sources for information about Crisis?

Never [1] [2] [3] [4] [5] [6] [7] **Very often**

- **Television:** [1] [2] [3] [4] [5] [6] [7]
- **Newspapers:** [1] [2] [3] [4] [5] [6] [7]
- **Radio stations:** [1] [2] [3] [4] [5] [6] [7]
- **Social media:** [1] [2] [3] [4] [5] [6] [7]
- **Celebrities and social media influencers:** [1] [2] [3] [4] [5] [6] [7]

No		**Always**	**Often**	**Sometimes**	**Rarely**	**Never**
01	I use social networking sites to solve my academic problems.					
02	I use social networking sites to do research work.					
03	I use social networking sites for online academic group discussions.					
04	I communicate with my friends via social networking sites for preparation for exams.					
05	I use social networking sites for collaborative learning.					
06	I use social networking sites to learn about my curricular aspect.					

07	I use social networking sites to seek help from my teachers.					
08	I use social networking sites to become more sociable.					
09	I use social networking sites to create my social identity.					
10	I prefer using social networking sites to attending social gatherings.					
11	Use social networking sites to strengthen personal relationships					
12	I use social networking sites to keep in touch with my relatives.					
13	I use social networking sites to get information regarding current social events.					
14	I use social networking sites for sharing pictures.					
15	I use social networking sites to look at funny sharing.					
16	I use social networking sites for watching movies.					
17	I use social networking sites to get relief from academic stress.					
18	I use social networking sites for following news related to Crisis					
19	I use social networking sites to share news about Crisis					
20	I use social networking sites to look for information related to Crisis.					
21	I check the information sources for validity by looking at other reliable sources.					
22	I share the information related to the Crisis without checking the source of the information.					
		Strongly disagree	**Disagree**	**Neither agree nor disagree**	**Agree**	**Strongly agree**
1	I am looking for news about the Sudanese crisis on social networks.					

2	People who are part of my social networks disseminate information about the crisis.					
3	All news regarding the crisis is accessible to me from my social networks.					
4	I never worry about finding information about the crisis from social media.					
5	I trust the information disseminated on social networks about the crisis.					
6	News on social media about the crisis is credible in its majorities.					
7	The information disseminated on social networks about the crisis is credible to me.					
8	I never trust information posted on social media about the crisis.					
9	I share all crisis information on social media.					
10	I choose the information related to the crisis that I share.					
11	I often rebroadcast information I receive about the crisis.					
12	People on my social networks often receive information related to crises from my account.					

What is your main reason for using social networking sites?

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APPX-2 Ethics Committee Decision Document

Evrak Kayıt Tarihi: 13.01.2023	Protokol No: 471456	Tarih: 24.01.2023

ANADOLU ÜNİVERSİTESİ
SOSYAL VE BEŞERÎ BİLİMLER BİLİMSEL ARAŞTIRMA VE YAYIN ETİĞİ KURULU
KARAR BELGESİ

ÇALIŞMANIN TÜRÜ:	Doktora Tez Çalışması
KONU:	Sosyal Bilimler
BAŞLIK:	Sudan Kriz Döneminde Üniversite Öğrencilerinin Sosyal Medya Kullanımlarının İncelenmesi Assessment Of Social Media Use By University Students During Sudanese Crisis 2019-2023
~~PROJE/~~TEZ YÜRÜTÜCÜSÜ:	Prof. Dr. Figen ÜNAL ÇOLAK
TEZ YAZARI:	Osman Alfahım Osman HAMED
ALT KOMİSYON GÖRÜŞÜ:	-
KARAR:	Olumlu

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- Export Sales and Marketing Manager, Graphic Designer, and Translator, Cınar itfaiye for municipal service vehicles and on-board equipment. Konya, Turkey. Jul 2020 – Up to date
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- Lecturer Sudan University of Science and Technology – Faculty of Communication Science – Department of Multimedia, Khartoum, Sudan. Jan 2012- Sep 2014
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Publications

- Ahmed, A. H., Elemo, A. S., & Hamed, O. A. O. (2023). Smartphone addiction and phubbing in international students in Turkey: The moderating role of mindfulness. Journal of College Student Development, 64(1), 64-78.
- Ahmed, A. H., Hamed, O. A. O., & Gocheva, S. (2020). Intercultural conflict and experiences of international students in Turkey. Open Education Studies, 2(1), 202-213. https://doi.org/10.1515/edu-2020-0120.