THE ROLE OF SOCIAL MEDIA IN ENHANCING COLLABORATIVE LEARNING AND ACADEMIC PERFORMANCE: EVIDENCE FROM THE UNIVERSITY OF GHANA

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A THESIS SUBMITTED TO THE DEPARTMENT OF OPERATIONS AND MANAGEMENT INFORMATION SYSTEMS, UNIVERSITY OF GHANA BUSINESS SCHOOL, UNIVERSITY OF GHANA, LEGON, IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF PHILOSOPHY (MPHIL) IN MANAGEMENT INFORMATION SYSTEMS DEGREE

OCTOBER 2025

DECLARATION

I do hereby declare that this work is the result of my research and has not been presented by anyone for any academic award in this or any other university. All references used in this work have been fully acknowledged.

I therefore bear responsibility for any shortcomings.

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ABSTRACT

The increasing use of social media in higher education has raised important questions about its role in shaping collaborative learning and academic performance. Although global research has highlighted both opportunities and challenges associated with social media adoption, less is known about how these dynamics operate in the Ghanaian context, where students navigate structural and infrastructural limitations. This study responds to that gap by examining how social media is adopted and used for academic purposes among students at the University of Ghana. The research was guided by the Technology Acceptance Model (TAM) and Self-Determination Theory (SDT). TAM emphasises the role of perceived usefulness and ease of use in driving adoption, while SDT provides a lens for understanding how social media fosters interaction, relatedness, and motivation. A quantitative survey was administered to 400 students, and the data were analysed using structural equation modelling (SEM) to test relationships between adoption, peer and faculty interaction, and academic performance. The results demonstrate that students are more likely to adopt social media when they perceive it to be both beneficial and easy to use. Once integrated into their academic routines, social media platforms were found to facilitate communication, resource sharing, and collaboration with peers and faculty, all of which contributed to improved academic outcomes. The findings confirm the value of social media as an extension of the classroom environment, while also drawing attention to local barriers such as unreliable connectivity and limited institutional support.

The study contributes to theory by showing how TAM and SDT can be applied together to explain patterns of technology use and motivation in higher education. It also demonstrates the methodological value of structural equation modelling in studying complex behavioural relationships in resource-constrained settings. Practically, the findings provide guidance for

educators and students on how to integrate social media effectively into teaching and learning, and for policymakers seeking to design interventions that promote purposeful digital engagement. By situating the analysis within Ghanaian higher education, the study enriches global debates on digital learning while providing evidence that is directly relevant to local practice and policy.

DEDICATION

I dedicate this work to my beloved mother, Mrs. Christiana Annan, of blessed memory. Though she is no longer with me, her love, prayers, and sacrifices continue to inspire me every day.

I also dedicate it to my father, Mr. Anthony Compson, whose support and encouragement have been a constant source of strength throughout this journey.

ACKNOWLEDGEMENT

First and foremost, I thank God for the strength, guidance, and grace that have carried me through this journey. Without Him, this work would not have been possible. I am sincerely grateful to my supervisor, Prof. Emmanuel Awuni Kolog, for his patience, guidance, and encouragement throughout this research. His constructive feedback and constant support have been invaluable. I am also very thankful to Prof. Acheampong and Owusu and Dr Sulemana Bankuoru Egala for his guidance and contribution, which helped shape this work in many ways.

My heartfelt appreciation goes to Mr Sylvester Ansah for always being supportive, and to my friends and colleagues from the MPhil MIS class for their encouragement, collaboration, and the many moments we shared during this program.

Lastly, I owe special thanks to my family. Their prayers, love, and sacrifices gave me the strength to keep going even in difficult times.

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LIST OF ABBREVIATIONS

AP	-	Academic Performance
AVE	-	Average Variance Extracted
COVID-19	-	Coronavirus Disease 2019
CR	-	Composite Reliability
HTMT	-	Heterotrait-Monotrait Ratio
IAS	-	Interaction Among Students
PLS	-	Partial Least Squares
PLS-SEM	-	Partial Least Squares Structural Equation Modeling
PEOU	-	Perceived Ease of Use
PU	-	Perceived Usefulness
Q^2	-	Predictive Relevance
R^2	-	Coefficient of Determination
SDT	-	Self-Determination Theory
SEM	-	Structural Equation Modeling
SIFM	-	Student Interaction with Faculty Members
SMAU	-	Social Media Actual Usage
TAM	-	Technology Acceptance Model
VIF	-	Variance Inflation Factor
Web 2.0	-	Web 2.0 (referring to interactive web technologies)

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Social media has profoundly transformed global communication, fostering an unprecedented level of connectivity across various sectors (Swanson, 2020; Whelan et al., 2020). These platforms, originally developed for social interaction, have expanded their influence far beyond personal communications, impacting professional and academic realms (Jacinto et al., 2021; Türel & Dokumacı, 2022) . The widespread adoption of digital devices such as iPads, laptops, and mobile phones has further integrated these platforms into everyday activities, enhancing their accessibility and functionality (Sadowski et al., 2017). This integration has revolutionized various fields, including education, where social media is increasingly becoming a crucial tool for engagement and learning (Lashaya, 2018; Dhiman, 2022).

In the context of education, the impact of social media is especially notable. Traditional educational models are increasingly being supplemented or challenged by digital innovations due to the growing student populations and limitations of conventional educational settings (Celestine & Nonyelum, 2018). With the rise of online education, social media platforms have emerged as important tools for engaging students and enhancing learning outcomes (Rachman & Putri, 2018). This shift has led educational institutions to explore social media as a potential method for improving student engagement and aligning teaching strategies with the digital preferences of today's students (Namera, 2018; Sabah, 2023a). Social media's role in education is multifaceted, extending from formal academic tools used for assessments and material dissemination to more informal uses that facilitate collaboration between students and educators (Jacinto et al., 2021; Udem et al., 2020).

The recent shift toward online and remote learning, significantly accelerated by the COVID-19 pandemic, further underscored the utility of social media in education (Hameed et al., 2022; Sangster et al., 2020). During this period, social media became an essential medium for collaborative learning and knowledge exchange, providing a platform for students and educators to interact more flexibly (Diraditsile & Samakabadi, 2018). These platforms not only supported remote learning but also prompted new discussions about how effectively they could support diverse learning outcomes across different academic disciplines (Swanson, 2020; Roberts, 2020). Also, scholars such as Dhiman (2022) and Ozcan-Deniz (2022) attest that social media offers great potential to enhance learning experiences.

In addition, studies have shown that social media can significantly improve learning outcomes when used effectively (Alalwan et al., 2019; Qureshi et al., 2023). For example, research conducted at universities in Malaysia and Nigeria revealed that students who actively used social media for educational purposes reported better academic outcomes than those who did not (Ajayi et al., 2019; Alshuaibi et al., 2018). Similarly, findings from studies in Pakistan also suggest that social media usage positively influences learning behaviour, contributing to sustainable education (Abbas et al., 2019). These studies demonstrate the potential of social media to enhance educational outcomes across different cultural and academic contexts.

However, the integration of social media into educational settings also presents several challenges. The distraction potential of social media, particularly in higher education, is a notable concern, with some studies reporting a negative correlation between excessive social media usage and learning outcomes (Alnjadat et al., 2019; Azizi et al., 2019a). For instance, research from medical universities in Iran found that students addicted to social media experienced lower academic performance due to increased distractions and reduced study time

(Azizi et al., 2019a). Similarly, studies conducted in Ghana have revealed that over-reliance on social media for non-educational purposes can lead to diminished academic outcomes (Kolan & Dzandza, 2018). These findings suggest that while social media can enhance learning, it must be integrated cautiously and strategically to prevent adverse effects on student performance (Kapoor et al., 2018; Sarwar et al., 2019).

Moreover, research has identified that social media's effectiveness in education varies depending on the discipline and how it is utilized (Siddiqui & Singh, 2016). For example, business students in Malaysia who used social media to collaborate on assignments reported higher engagement and improved learning outcomes compared to students in other disciplines (Alshuaibi et al., 2018). Conversely, a study conducted at Kurukshetra University in India found that excessive social media usage negatively impacted students' academic achievements, particularly in disciplines requiring more in-depth analytical skills (Dhiman, 2022). These findings highlight the importance of context and moderation in the use of social media as an educational tool (Alalwan et al., 2019a; Hameed et al., 2022).

In addition, social media platforms facilitate collaborative learning, which has been shown to enhance student engagement and interaction in educational settings (Ramzan et al., 2023; Sarwar et al., 2019). Studies across various universities have revealed that students who engage in collaborative learning through social media tend to demonstrate improved learning outcomes compared to those who rely solely on traditional learning method(Jacinto et al., 2021)s. For example, research from a study conducted at the University of Sharjah in the United Arab Emirates found that social media fostered a sense of community among students, promoting deeper collaboration and knowledge-sharing (Alnjadat et al., 2019). This, in turn, led to higher

academic performance and greater overall satisfaction with the learning experience (Roberts, 2020; Sabah, 2023a).

1.2 Research Problem

Research on social media in higher education primarily focuses on its role in supporting communication and collaboration, yet it rarely examines how these activities contribute to measurable academic performance, particularly in resource-constrained settings like Ghana (Abbas et al., 2019; Barton et al., 2021; Ajayi et al., 2019). For instance, Abbas et al. (2019) explored how social media enables peer-to-peer knowledge sharing in Pakistan, while Barton et al. (2021) investigated its enhancement of student engagement in the United States through interactive tools. Similarly, Ajayi et al. (2019) studied how digital platforms foster group-based learning in Nigeria, and Alamri et al. (2020) and Alshuaibi et al. (2018) highlighted their role in resource sharing in Saudi Arabia and Malaysia. These studies underscore social media's potential to extend classroom interactions but often focus on descriptive benefits, noting challenges like distraction without connecting collaborative use to outcomes like improved grades or skills (Chaka, 2021) . This limited exploration of academic performance impacts, especially in contexts with infrastructural barriers, highlights the need for further investigation. Current research often examines single platforms, overlooking how the combined use of multiple social media tools influences collaborative learning (Jacinto et al., 2021; Qureshi et al., 2023. For example, Mahdiuon et al. (2020) studied Telegram's role in group discussions in Iran, while Manickam et al. (2020) explored Facebook's use for academic coordination in Malaysia. However, recent findings by Jacinto et al. (2021), Qureshi et al. (2023), and Nti et al. (2022) indicate that students integrate WhatsApp for real-time communication, Facebook for resource sharing, and Telegram for organizing study materials, creating a dynamic learning ecosystem. This multi-platform approach can enhance collaboration but may introduce issues

like fragmented information flows. The limited attention to how these integrated tools shape learning processes underscores a critical gap in understanding their collective impact on academic workflows, paving the way for deeper exploration.

Research on social media's educational benefits often highlights practical advantages but provides limited insight into the mechanisms through which collaborative use drives academic performance (Ansari & Khan, 2020; Liu et al., 2022). Ansari and Khan (2020) found that social media fosters faculty-student collaboration in Indian universities, improving project outcomes, while Liu et al. (2022) showed that structured platform use enhances assessment scores in Chinese institutions. Similarly, Nti et al. (2022) noted that social media improves resource access and peer feedback in collaborative settings. These studies demonstrate social media's potential to connect learners and support group work, yet they rarely clarify how factors like perceived usefulness or ease of use mediate academic outcomes (Chaka, 2021). This knowledge gap in understanding the mechanisms of social media's impact on performance, particularly in diverse educational contexts, calls for further investigation into its underlying processes.

In Ghana, research on social media in higher education primarily describes usage patterns, offering insufficient analysis of how collaborative practices affect academic performance in the context of infrastructural challenges (Kolan & Dzandza, 2018; Nurudeen et al., 2023). Kolan and Dzandza (2018) highlighted social media's role in information sharing among students, while Nurudeen et al. (2023) noted that over 70% of university students use platforms for study purposes. Roberts (2020) similarly explored social media's integration into group learning. However, these studies focus on adoption trends and barriers like high data costs, without examining how multi-platform collaboration influences academic outcomes in

Ghana's universities, where traditional teaching methods and limited digital infrastructure prevail (Mtebe & Raisamo, 2014). In light of these gaps, this study investigates how social media facilitates collaborative learning and its impact on academic performance among Ghanaian university students.

1.3 Research Purpose

The purpose of this study is to examine how social media supports collaborative learning and improves academic performance among university students.

1.4 Research Objectives

The research objectives of the study are:

1. To examine how perceived usefulness and ease of use influence students' adoption of social media for academic purposes.
2. To evaluate the impact of social media usage on collaborative learning among university students.
3. To assess the effect of social media usage on the academic performance of students.

1.5 Research Questions

The ensuring research questions are:

1. What is the influence of perceived usefulness and ease of use on students' adoption of social media for academic purposes?
2. What is the impact of social media usage on collaborative learning among university students?
3. What is the effect of social media usage on the academic performance of students?

1.6 Significance of the Study

This study is important for students, educators, and policymakers in the higher education sector. By examining how perceived usefulness and ease of use influence students' adoption of social media for academic purposes, the study provides insights into how digital platforms can be effectively integrated into teaching and learning. Understanding the role of social media in supporting collaboration with peers and faculty also helps identify practical ways to enhance student engagement and knowledge sharing beyond the classroom.

For educators, the findings will offer guidance on how to incorporate social media into instructional strategies in ways that encourage interaction and active learning. For policymakers and university administrators, the study provides evidence that can support the development of policies and initiatives aimed at promoting the responsible and purposeful use of digital platforms as tools for higher education. In addition, the study contributes to the application of the Technology Acceptance Model (TAM) and Self-Determination Theory (SDT) within the context of Ghanaian higher education. By situating these theories in a resource-constrained but digitally active environment, the research advances understanding of how global models can be adapted to local contexts. The results, therefore, not only address practical challenges but also enrich ongoing academic discussions about the role of social media in higher education.

1.7 Organization of Thesis

This thesis is structured to systematically examine the impact of social media collaboration on students' learning outcomes. Chapter One introduces the study by outlining the background, research problem, objectives, and research questions, highlighting the growing relevance of social media in academic settings and its potential influence on learning. Chapter Two reviews

existing literature on the use of social media for academic collaboration, discussing both its benefits and challenges. It identifies key research gaps that this study addresses. Chapter Three outlines the theoretical framework guiding the study, drawing on the TAM and SDT to understand the dynamics of social media use in education.

Chapter Four presents the research methodology, including the design, sampling, data collection, and analytical procedures used to investigate the relationships among social media usage, student interaction, and academic performance. Chapter Five reports the study's findings, focusing on the dominant platforms used and their effects on collaborative learning and academic outcomes, and also discusses the findings in light of the research questions and theoretical perspectives.

Finally, Chapter Six concludes the thesis by summarizing key insights, implications for practice, and recommendations for future research. This structure ensures a logical and comprehensive investigation of the topic.

CHAPTER TWO

LITERATURE REVIEW

2.1 Chapter Overview

Chapter One outlined the background and objectives of the study, emphasizing the growing role of social media in higher education and the importance of examining its influence on students' learning outcomes in Ghana. Building on that foundation, this chapter reviews existing literature related to the study. It begins with a conceptual discussion of social media, collaborative learning, and academic performance. This is followed by an empirical review of studies that have examined how social media has been used in educational settings, with particular attention to findings from Ghana and other comparable contexts. The chapter concludes by identifying gaps in the literature and presenting the conceptual framework that guides the study.

2.2 Social Media

2.2.1 Definition of Social Media

Social media has become an essential part of contemporary communication, serving both technological and social functions. It can be understood as internet-based platforms that allow users to create, share, and exchange information in interactive communities. These platforms include well-known applications such as Facebook, WhatsApp, Twitter, Instagram, YouTube, LinkedIn, blogs, and wikis, all of which provide spaces for individuals to share content, communicate, and collaborate (Alshuaibi et al., 2018; Udem et al., 2020). What distinguishes social media from traditional media is its interactive nature, which enables real-time or delayed communication among users, breaking the boundaries of time and space in social interaction.

Scholars have developed different ways of classifying social media. Kaplan and Haenlein (2020) proposed six categories: collaborative projects, blogs and microblogs, content

communities, social networking sites, virtual game worlds, and virtual social worlds. Jacinto et al. (2021) expanded this typology to include bookmarking services, social news, and photo and video sharing platforms. These classifications highlight the diversity of social media applications and the variety of interaction patterns they support. For example, some platforms are primarily used for information sharing, while others focus on group communication, community discussions, or multimedia exchange.

For the purpose of this study, social media is defined as a collection of internet-based platforms built on Web 2.0 technologies that enable the creation and sharing of user-generated content (Alamri et al., 2020a; Boahene et al., 2019a). This definition is appropriate because it emphasizes the participatory and collaborative features that make social media particularly relevant for academic contexts. Platforms such as WhatsApp and Facebook, for instance, allow students to organize discussions, share resources, and maintain ongoing collaboration outside the classroom environment (Ansari & Khan, 2020; Sivakumar, 2022; Liu et al., 2022). Adopting this definition provides a basis for examining how students use different platforms not only as tools of communication but also as spaces for academic collaboration. It highlights the interactive and community-driven nature of social media, which is central to understanding its influence on learning outcomes in Ghanaian higher education.

2.2.2 Evolution of Social Media

The evolution of social media reflects both advances in technology and the human need for connection. Early experiments in online networking can be traced to the late 1990s. One of the first platforms, *SixDegrees.com*, launched in 1997, allowed users to create personal profiles, build friend lists, and send messages. Although it attracted attention as a novel form of digital interaction, the platform was eventually shut down in 2001 due to financial difficulties and user

fatigue (Namera, 2018). Around the same time, other sites such as Asian Avenue, Black Planet, and MiGente emerged, targeting specific communities and laying the foundation for the social networking culture that followed (Boyd & Ellison, 2007).

The early 2000s marked a turning point with the arrival of LinkedIn (2003) and MySpace (2003), soon followed by Facebook (2004) and Orkut. These platforms introduced more sophisticated features such as customizable profiles, friend networks, and interactive content sharing, which significantly broadened user engagement (Miller et al., 2016). Facebook in particular became a dominant force, reaching one billion users by 2012, while Twitter, launched in 2006, quickly established itself as a platform for real-time updates and public communication (Swist et al., 2015). As user numbers grew rapidly, concerns also arose about the social and developmental effects of these platforms. Regulations were introduced to restrict underage participation, yet studies indicated that many young people were already active on social media despite age limits (Guay, 2022a). This underlined the widespread appeal of these platforms across demographic groups and highlighted their growing influence on education, professional life, and personal interaction.

From the emergence of Web 2.0 technologies to the present, social media has transformed the internet into an interactive and participatory environment. It has become central to communication, information sharing, and collaboration, extending its impact beyond personal relationships to professional and academic domains (Al-Rahimi et al., 2023; Swanson, 2020; Burbules, 2016). Today, social media is not only a space for entertainment and networking but also a tool that shapes learning environments, professional practices, and societal change (Jain, 2024; Joo et al., 2018; Rachman & Putri, 2018).

2.2.3 Types of Social Media

The diversity of social media platforms has led researchers to classify them into distinct categories based on their features and patterns of use. Kaplan and Haenlein (2020) outlined a widely cited taxonomy that identifies six major categories: collaborative projects, blogs and microblogs, content communities, social networking sites, virtual game worlds, and virtual social worlds. Collaborative projects include tools such as wikis and shared documents that enable users to co-create and refine content. Blogs and microblogs, exemplified by platforms like WordPress and Twitter, allow individuals to post commentary or updates in chronological formats. Content communities such as YouTube emphasize the distribution of multimedia files, while social networking sites including Facebook and LinkedIn focus on building and maintaining interpersonal networks. Virtual game worlds and virtual social worlds extend interaction into immersive environments where participants adopt digital identities and engage in real-time interaction.

Building on this framework, Jacinto et al. (2021) proposed a broader classification that reflects the continuous expansion of digital applications. They distinguish categories such as social bookmarking, social news, social networking, social photo and video sharing, and wikis. Social bookmarking services enable users to collect, organize, and share online resources, while social news platforms allow communities to rate and discuss current events. Social networking remains central to online interaction, while photo and video sharing applications such as Instagram extend communication through visual media. Wikis remain important as collaborative spaces for developing and curating shared knowledge. This expanded classification illustrates how different platforms support diverse forms of interaction and engagement, ranging from personal communication to collective knowledge production.

These typologies show that social media is not a uniform phenomenon but rather a collection of tools serving varied purposes. In the context of higher education, this variety is significant because students choose platforms based on the type of learning activity they wish to engage in. For example, a group project may be coordinated through WhatsApp for quick updates, while more formal discussions might occur on Facebook groups or through collaborative documents. Understanding the distinctive functions of these categories helps explain why multiple platforms often coexist in academic contexts and how their unique features can be leveraged to support collaborative learning.

2.2.4 Social Media Usage in Ghanaian Education

The integration of social media into education in Ghana reflects the increasing penetration of digital technologies and the growing familiarity of students with online platforms. Data from the Ghana National Communication Authority (2016) highlight the steady growth of mobile subscriptions and internet access, which has expanded opportunities for students to adopt social media tools as part of their academic ctivities. Guay (2022) further emphasizes that the rise of a digitally literate student population has positioned social media as an influential medium for communication, knowledge sharing, and collaboration in Ghanaian higher education.

Empirical studies illustrate both the educational benefits and the challenges of social media use among students. Kolan and Dzandza (2018) found that students frequently use platforms such as WhatsApp and Facebook to exchange lecture notes, organize study groups, and maintain peer-to-peer communication. Similarly, Nurudeen et al. (2023) observed that social media enhances access to academic resources and supports collaborative interactions, which strengthen student engagement with learning tasks. At the same time, Habes et al. (2018a) noted that a significant portion of student activity on these platforms is non-academic,

including chatting and entertainment, which can divert attention away from learning. Dhiman (2022) confirmed this dual impact, stressing that while social media fosters learning opportunities, it also introduces distractions that may reduce academic performance.

The coexistence of positive and negative outcomes has led researchers to call for intentional strategies that maximize educational benefits while limiting adverse effects. Kolan and Dzandza (2018) recommended structured integration of social media into classroom activities to channel student engagement toward learning. Nurudeen et al. (2023) similarly advocated for training programs that build digital literacy and encourage responsible use of online platforms. These findings indicate that the future of social media in Ghanaian education will depend not only on expanding access but also on developing institutional policies and pedagogical approaches that ensure its effective and responsible use.

2.2.5 What Social Media Platforms are Used for in Education

The choice of social media platforms for educational purposes often reflects both accessibility and functionality. In Ghana, WhatsApp has emerged as one of the most widely used platforms in higher education because of its affordability, ease of use, and group communication features. Kolan and Dzandza (2018) observed that students frequently create WhatsApp groups to share lecture notes, coordinate assignments, and maintain communication with peers beyond classroom hours. Nurudeen et al. (2023) confirmed that WhatsApp is favored because it supports real-time messaging and multimedia sharing, which makes it highly adaptable to academic collaboration and informal learning communities.

Other platforms are also used in complementary ways depending on the academic context. Facebook, for example, remains significant for group discussions and information

dissemination. Habes et al. (2018a) reported that students often form Facebook groups to connect with large cohorts, exchange academic resources, and engage in peer-to-peer problem solving. LinkedIn has gained traction as a professional networking tool, helping students link classroom learning to career opportunities and exposure to industry trends (Dwivedi et al., 2020). YouTube is equally important for independent study, providing students access to recorded lectures, tutorials, and demonstrations that supplement classroom teaching (Hameed, 2022). These varied uses demonstrate that students select platforms strategically, aligning the technical features of each tool with specific learning needs.

The reliance on multiple platforms illustrates how social media supports both formal and informal learning processes. Dhiman (2022) pointed out that WhatsApp and Facebook are frequently used for group projects and collaborative discussions, while YouTube is commonly accessed for individual learning and revision. Rachman and Putri (2018) added that such platforms extend learning spaces beyond the classroom and allow students to access educational content at any time, thereby encouraging flexibility in study habits. The selection of platforms is therefore shaped by their ability to accommodate different modes of interaction, from synchronous group chats to asynchronous content consumption.

Evidence from these studies shows that students in Ghanaian higher education rarely depend on a single application. Instead, they combine platforms in ways that reflect both the opportunities and limitations of each. WhatsApp facilitates immediate and interactive exchanges, Facebook supports larger communities, LinkedIn connects academic learning with professional development, and YouTube provides on-demand resources for self-study. This combination highlights the varied functions that social media performs in the educational

environment and underscores its role as an important tool for communication, resource sharing, and collaboration (Nurudeen et al., 2023; Kolan & Dzandza, 2018; Dhiman, 2022).

2.2.6 How Social Media Can Be Leveraged for Learning in Ghanaian Education

The potential of social media to enhance education in Ghana lies not only in its widespread adoption but also in the strategies applied to integrate it into teaching and learning. Daniel (2023) argues that when social media is deliberately incorporated into educational practices, it can foster active student participation and expand the learning environment beyond the classroom. Platforms such as WhatsApp and Facebook provide spaces where teachers can establish dedicated groups for discussion, assignment collaboration, and resource sharing. Yu et al. (2022) emphasize that these virtual spaces encourage both peer-to-peer and student–instructor interaction, which increases engagement and deepens understanding of course material. In this way, social media acts as a supplement to formal classroom instruction, offering a flexible channel for continuous academic dialogue.

One effective approach is embedding social media use directly within the curriculum. Guay (2022a) suggests that assignments designed around online discussions, collaborative projects, or research conducted through digital platforms help students to see the relevance of these tools in academic contexts. Hameed (2022) adds that when social media activities are aligned with learning objectives, they not only make tasks more interactive but also highlight the practical application of knowledge. This structured integration transforms platforms that might otherwise serve as distractions into purposeful tools that reinforce academic goals.

The interactive nature of social media also facilitates instant feedback, which is central to effective learning. Hosen et al. (2021a) observe that platforms allow students to ask questions, submit assignments, and receive feedback from both instructors and peers in real time. Yu et

al. (2022) note that these exchanges can take the form of peer reviews or collaborative commentary on shared resources, creating opportunities for iterative learning. Huang et al. (2019) reinforce this view, showing that timely responses within online environments improve comprehension and motivate students to remain engaged with academic tasks. Such feedback loops represent a significant departure from traditional classroom models, where communication is often delayed and unidirectional.

In addition to fostering interaction, social media provides access to an extensive range of supplemental materials. Daniel (2023) and Guay (2022) highlight that students can explore webinars, online tutorials, and digital libraries shared by educators through platforms such as YouTube or LinkedIn. Dhiman (2022) further explains that this exposure enriches learning by giving students access to multiple perspectives and resources that extend beyond the scope of prescribed textbooks. By curating and sharing high-quality digital content, educators can create a richer academic experience that blends formal instruction with global knowledge networks.

Finally, social media can play a role in supporting student motivation and self-regulation. Daniel (2023) points out that students may use online groups to set study goals, monitor their progress, and seek encouragement from peers with similar academic interests. Dhiman (2022) observes that platforms also provide opportunities to showcase academic achievements and share motivational content, which fosters a culture of support and recognition. In this way, social media functions not only as a communication tool but also as a means of sustaining academic momentum through ongoing peer reinforcement.

2.2.7 Why Social Media is Beneficial to Education in Ghana

The advantages of social media in education extend beyond convenience, shaping how students in Ghana engage with learning. Habes et al. (2018a) note that digital platforms support continuous communication between students and educators, providing an environment where dialogue is not limited to scheduled class sessions. Azizi et al. (2019) add that such platforms foster interactivity by extending discussions beyond the classroom, enabling students to clarify difficult concepts and seek explanations when needed. Hameed (2022) emphasizes that this ongoing interaction strengthens student engagement, while Hosen et al. (2021a) highlight its role in resolving doubts and promoting a deeper understanding of course material. These findings show that social media functions as an academic extension, creating a more dynamic and responsive learning process.

Another significant benefit lies in the development of digital literacy skills that are increasingly necessary in contemporary academic and professional settings. Yu et al. (2022) argue that using social media for educational purposes equips students with competencies in online communication, information retrieval, and collaboration. Komendantova et al. (2021) confirm that these skills are highly valued in the global job market, where digital collaboration and information management have become essential. By integrating social media into their academic routines, Ghanaian students not only strengthen their academic engagement but also gain transferable skills that prepare them for careers in an increasingly digital economy.

Access to social media also helps reduce barriers faced by students in remote or underserved regions. Yu et al. (2022) observed that online platforms expand opportunities for students who might otherwise lack access to academic resources. Ramzan et al. (2023) further explained that students in geographically isolated areas can use social media to obtain educational materials, participate in collaborative projects, and engage with peers across different locations. This

capacity to overcome geographic constraints highlights the inclusive potential of social media in Ghanaian higher education, where disparities in infrastructure often limit learning opportunities.

A further advantage is the flexibility that social media provides in shaping individual learning experiences. Al-Rahmi et al. (2022) stress that these platforms allow students to take greater control of their learning pathways, supporting autonomous and self-paced study. Yu et al. (2022) echo this perspective, observing that the ability to choose when and how to interact with content accommodates different study habits and personal circumstances. In Ghana, where students often balance academic work with employment or family responsibilities, this flexibility makes learning more accessible and sustainable. By providing both resources and autonomy, social media enhances student agency in the learning process.

2.2.8 Disadvantages of using social media for student learning

Although social media has become embedded in higher education because of its capacity to foster interaction and collaboration, its use is not without challenges. Jacinto et al. (2021) caution that despite widespread adoption, the foundations of these platforms were never designed with educational objectives in mind, which raises doubts about their appropriateness in formal learning environments. Qureshi et al. (2023) and Sarwar et al. (2019) report that students sometimes find academic uses of social media less enjoyable than its recreational functions, which can reduce motivation to engage with learning content online. Whelan et al. (2020) also argue that the entertainment-driven origins of social media are not fully aligned with structured educational practices, suggesting that their popularity among young people should not be the sole justification for their integration into classrooms. This misalignment

highlights an important tension between the social appeal of these platforms and their academic utility (Alamri et al., 2020a).

Another limitation is the uneven learning experience that results from platform differences. Ramzan et al. (2023) observed that certain tools, such as blogs, may not provide the same level of interaction or flexibility as instant messaging or multimedia-sharing platforms, leading to inconsistent engagement. Sweller (2023) further explained that students and educators may face difficulties in adapting to emerging technologies, which can create barriers to effective participation and lower confidence in digital learning environments. These challenges reveal that not all platforms are equally effective for educational purposes, and that differences in technological familiarity can exacerbate learning inequalities.

Concerns about safety and well-being also shape the debate around social media in education. Cyberbullying remains one of the most significant risks associated with digital interaction. Watts et al. (2017), in their review of prior studies, documented the widespread occurrence of online harassment among both adolescents and undergraduates. Hameed (2022) noted that cyberbullying undermines emotional and psychological well-being, while Hosen et al. (2021a) reported that victims often experience distress and disengagement, which negatively affect academic performance. Huang et al. (2019) added that existing interventions have not been fully effective in addressing these problems, pointing to the persistence of online harassment despite growing awareness of its harmful effects.

The challenge of maintaining appropriate online behavior further complicates the use of social media in education. Jacinto et al. (2021) found that deviations from accepted norms of digital conduct, often referred to as “netiquette,” can weaken group cohesion and create negative

impressions within learning communities. Ditrich and Sassenberg (2017) suggested that some online groups attempt to correct this through "natural purification," where participants collectively resist or expel disruptive influences. While such self-regulation may occur, it is not always sufficient to prevent the reputational and relational harm caused by inappropriate behaviour. Security risks are another concern for both individuals and institutions. Ajayi et al. (2019) identified threats such as blackmail, cyberstalking, and extortion as potential dangers of social media participation. Akram and Kumar (2017) added that organizations, including educational institutions, are particularly vulnerable to breaches that can lead to financial losses, damage to reputation, and theft of intellectual property. Alamri et al. (2020a) stressed the importance of institutional safeguards, including technical controls, robust policy frameworks, and ongoing training, to mitigate these risks and ensure that social media use does not compromise student safety or institutional integrity.

2.2.9 Technology Acceptance Model and Social Media Adoption

The Technology Acceptance Model (TAM), originally developed by Davis (1989), has been widely used to explain how individuals accept and use new technologies. At its core, the model identifies two primary determinants of technology adoption: Perceived Usefulness (PU) and Perceived Ease of Use (PEOU). PU refers to the degree to which a user believes that a system or tool will improve their performance, while PEOU reflects the extent to which the system is perceived as effortless to use. These constructs directly shape users' behavioural intentions, which in turn influence actual usage of the technology. Over the years, TAM has been applied in a variety of contexts, including education, to explain why students choose to adopt or resist digital learning tools (Alamri et al., 2020a; Liu et al., 2022).

When applied to social media in higher education, TAM provides a useful framework for understanding why students integrate these platforms into their academic routines. For

instance, if students perceive social media as an effective means of sharing resources, collaborating with peers, and improving learning outcomes, they are more likely to engage with it consistently for academic purposes (Ansari & Khan, 2020; Alamri et al., 2020a). Conversely, if they find these platforms difficult to navigate or unsuitable for academic engagement, their adoption may be limited, regardless of the platforms' popularity. Thus, PU and PEOU serve as important predictors of whether social media use extends beyond leisure and becomes embedded in students' learning practices (Qureshi et al., 2023; Sabah, 2023).

Several empirical studies support this perspective. Alamri et al. (2020a), for example, used TAM to examine social media adoption among Saudi university students and found that both PU and PEOU significantly influenced actual usage for collaborative learning. Similarly, Liu et al. (2022) confirmed that students' confidence in the usefulness and simplicity of social media tools directly shaped their engagement in academic discussions and collaborative tasks. These findings suggest that adoption is not determined solely by access or availability, but rather by students' perceptions of how these platforms contribute to their academic needs. In Ghana, where students often rely on mobile-first approaches to access digital tools, perceptions of ease and usefulness may be particularly influential, given infrastructural challenges and the need for efficient, accessible platforms (Kolan & Dzandza, 2018; Nurudeen et al., 2023).

Integrating TAM into the analysis of social media adoption is therefore essential in examining the current study's objectives. By focusing on PU and PEOU, the model provides a theoretical basis for explaining how students transition from casual use of social media to purposeful adoption for academic purposes. This aligns with evidence from both local and international contexts, which demonstrates that students' willingness to adopt social media for learning is shaped not only by social influence and availability, but also by their belief that these tools are

useful and easy to use in supporting academic performance (Ajayi et al., 2019; Alamri et al., 2020a; Liu et al., 2022).

2.3 Academic Performance

2.3.1 Concept of Academic Performance

Academic performance is a central concept in education, as it reflects the extent to which students meet learning objectives and contribute to institutional goals. Ajayi et al. (2019) describe performance as a key indicator of student achievement and institutional effectiveness, positioning it as an essential element of educational evaluation. Mankoe (2022) defines performance more broadly as the contribution of an individual, whether student or worker, to the attainment of organizational objectives. In line with this institutional perspective, Akram and Kumar (2017) explain that such contributions are often assessed within a defined period and are demonstrated through observable behaviours and measurable outcomes. These definitions highlight the dual importance of academic performance, both as a measure of personal success and as an indicator of institutional progress.

Beyond institutional outcomes, academic performance also reflects how students approach their studies and manage assigned tasks. Alamri et al. (2020a) emphasize that performance is closely linked to how students engage with coursework, complete assignments, and adapt to the demands of their academic environment. The Cambridge Dictionary of English, cited by Alalwan et al. (2019a), frames academic performance more specifically as the ability of individuals, groups, or institutions to complete learning activities or achieve high results in standardized assessments. This definition underlines the significance of both collective and individual dimensions of performance, encompassing not only the achievements of institutions but also the accomplishments of students within them.

Scholars further argue that academic performance includes intellectual competence and cognitive ability in addition to task completion. Mankoe (2022) stresses that a student's intellectual capacity underpins their ability to manage educational requirements, while Opoku-Asare and Siaw (2015) note that performance represents the extent to which students demonstrate mastery of taught material through learning outcomes. Guay (2022a) supports this perspective by highlighting the connection between cognitive ability and measurable academic success, suggesting that intellectual skills directly influence achievement levels. These insights show that performance is not solely a matter of completing tasks but also of applying knowledge and demonstrating higher-order thinking. The evaluation of academic performance often involves predetermined benchmarks that assess progress and achievement. Alalwan et al. (2019a) and Hameed et al. (2022) explain that these benchmarks are typically measured through tests, examinations, and continuous assessments. Students who consistently meet or exceed expected standards are considered high achievers, while those who fall below are frequently classified as underachievers. Such classifications, although reductive, provide institutions with criteria for assessing student progress across different subjects and learning activities. Academic performance, therefore, represents both the measurable outcomes of learning and the intellectual capacities that enable students to fulfil the expectations of their educational programs.

2.3.2 The Impact of Social Media Collaboration on Learning Outcomes

The impact of social media collaboration on students' learning outcomes has received significant attention in educational research as digital platforms increasingly shape academic practices. Ajayi et al. (2019), Akram and Kumar (2017), and Alalwan et al. (2019a) note that social media tools offer opportunities for collaborative learning and knowledge sharing, which

can positively influence academic outcomes when used appropriately. Alamri et al. (2020a), Al-Bahrani et al. (2015), and Alnjadat et al. (2019) similarly point out that while these platforms can enhance performance, the results often depend on how students and institutions manage their use. Social media collaboration enables students to exchange resources, participate in academic discussions, and strengthen peer connections, creating environments where learning outcomes are likely to improve (Alshayeb, 2018; Alwagait et al., 2015; Ansari & Khan, 2020).

Research consistently demonstrates that collaboration through social media enhances participation and interactivity. Hosen et al. (2021) argue that platforms such as WhatsApp and Facebook support real-time discussions that deepen understanding of course material. Ansari and Khan (2020) also found that social media increases interactivity among students by facilitating collaborative problem-solving and group work. Alamri et al. (2020) add that resource sharing across platforms provides broader access to notes, readings, and academic content, which enriches learning outcomes. Al-Bahrani et al. (2015) confirmed that these collaborative exchanges help students consolidate knowledge and improve performance in assessments.

Active participation is another important factor. Ajayi et al. (2019) emphasize that the interactive nature of social media keeps students engaged with course material, while Sivakumar (2022) observed that collaboration on platforms motivates learners to sustain involvement in academic tasks. Hosen et al. (2021) similarly highlight that diverse peer interactions increase motivation and foster critical thinking, both of which contribute to stronger performance. This evidence suggests that meaningful collaboration online is not only about access to resources but also about sustaining engagement that leads to deeper learning.

Social media also broadens access to academic resources beyond traditional classroom materials. Qureshi et al. (2023) and Mankoe (2022) found that students use platforms to access articles, research papers, and educational videos, supplementing conventional instruction. Boahene et al. (2019) and Dhiman (2022) further confirm that this expanded access positively influences outcomes, as students are able to approach course content from multiple perspectives and at their own pace.

At the same time, the impact of social media collaboration is not uniformly positive. Sivakumar (2022) warns that excessive use can lead to distraction, diverting attention away from academic responsibilities. Swist et al. (2015) and Ramzan et al. (2023) add that while blogs, podcasts, and other platforms can promote engagement, they may also waste time if not directed toward learning objectives. Türel and Dokumacı (2022) argue that effectiveness depends largely on how students manage their focus and balance academic versus recreational use. These findings suggest that the benefits of collaboration are contingent on disciplined engagement with social media tools.

Motivation and the quality of interactions also determine outcomes. Hosen et al. (2021) show that students who are intrinsically motivated are more likely to use social media effectively for academic tasks. Qureshi et al. (2023) emphasise that meaningful collaboration, rather than passive or socially driven use, is associated with improved performance. Students who engage in purposeful exchanges, such as sharing academic resources or problem-solving with peers, gain more than those who use platforms mainly for entertainment. These findings indicate that social media collaboration has the potential to improve learning outcomes by promoting participation, fostering collaboration, and expanding access to resources. However, its effectiveness depends on the degree of motivation, the quality of interactions, and the discipline with which students manage their time online. When aligned with academic goals, social media

can serve as a powerful tool for collaborative learning and improved performance, as demonstrated by Ansari and Khan (2020) and Hosen et al. (2021).

Understanding how social media usage affects academic performance requires attention to what is meant by usage. Researchers differentiate between frequency and intensity of use, the primary purpose for which platforms are employed, and the form of engagement, whether active or passive. Frequency captures how often students access platforms, while intensity refers to how much time and cognitive effort they devote to activities on those platforms. Purpose distinguishes academic uses such as resource sharing, discussion, and assignment coordination from recreational uses such as chatting or entertainment. Platform features and affordances, therefore, matter, since instant messaging, multimedia sharing, and document collaboration support different educational activities (Ansari & Khan, 2020; Nurudeen et al., 2023).

Empirical work also shows that positive academic effects occur when social media is used intentionally for learning. Studies that document beneficial outcomes highlight mechanisms such as improved access to diverse resources, peer scaffolding, and continuous academic dialogue. Ansari and Khan (2020) and Alamri et al. (2020a) found that collaborative exchanges on social media increase interactivity and encourage deeper engagement with course material. Boahene et al. (2019) reported that in a Ghanaian sample, use of social media for academic purposes was associated with higher self-efficacy and better course outcomes. Liu et al. (2022) demonstrated that perceived usefulness and active learning mediated the link between platform use and performance, showing that when students view social media as valuable for learning, they are more likely to use it in ways that improve outcomes.

Conversely, a substantial body of research links certain patterns of social media use to poorer academic results. Studies by Lau (2017) and Barton et al. (2018) found that multitasking and frequent context switching associated with social media reduce attention and impair learning. Caratiquit and Caratiquit (2023) and Turel and Dokumaci (2022) reported associations between problematic or addictive use and greater procrastination, which in turn undermines timely completion of academic tasks. Ramzan et al. (2023) and Swist et al. (2015) noted that even platforms with educational potential may become time sinks if students adopt them primarily for leisure; the distinction between academic and non-academic engagement therefore frequently determines whether social media helps or hinders performance.

The inconsistent findings across studies point to the importance of moderators and mediators. Cognitive ability and self-regulation appear repeatedly as buffering factors. Apuke et al. (2024) and Liu et al. (2022) show that students with stronger metacognitive skills and higher academic self-efficacy manage information overload more effectively and derive greater benefit from online collaboration. Motivation also matters: Hosen et al. (2021) found that intrinsically motivated students use social media in more purposeful ways, yielding better learning outcomes. Technology acceptance constructs are relevant as well. Perceived usefulness and perceived ease of use influence whether students adopt platforms for academic tasks and how they apply them once adopted (Alamri et al., 2020a). Faculty involvement is another moderator; studies by Hu et al. (2015) and Sher (2009) illustrate that quality interaction with instructors amplifies the educational value of digitally mediated communication.

Methodological limitations in the literature complicate causal interpretation. Much evidence rests on cross-sectional surveys that link self-reported use to grades or perceived learning, which leaves open questions about directionality and omitted variables. Quasi-experimental

work, such as Yu et al. (2022), provides stronger causal leverage but is relatively rare. Several reviewers and authors, including Sabah (2023) and Alamri et al. (2020a), call for longitudinal designs and experimental interventions to track how patterns of use evolve and to isolate the effects of platform features, task design, and pedagogical support. Comparative studies that evaluate different platforms under similar conditions are also scarce, limiting understanding of which affordances matter most for performance.

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2.4 Empirical Studies

2.4.1 Related Empirical Studies

The empirical review provides insight into how social media use influences academic performance, collaboration, engagement, and cognitive processes across different contexts. Researchers have employed diverse theoretical frameworks such as the Technology Acceptance Model (TAM), Social Learning Theory (SLT), and Self-Regulated Learning Theory to examine the educational implications of digital platforms (Alwagait et al., 2015; Barton et al., 2018). These studies offer evidence of both benefits and challenges, showing that the impact of social media on student learning is shaped by the nature of use, institutional context, and individual learner characteristics.

Several studies have highlighted the positive influence of social media on collaboration and peer learning. Ansari and Khan (2020) and Alamri et al. (2020) found that digital platforms enhance interactivity, engagement, and knowledge sharing among students, which in turn supports improved academic performance. Sabah (2023) and Yu et al. (2022) also reported that social media facilitates collaborative learning environments, though they cautioned that multitasking behaviours may undermine these benefits. The findings suggest that while collaborative use of social media promotes active learning, its effectiveness depends on whether students focus on academic engagement rather than simultaneous non-academic activities.

Other studies have focused on the risks associated with excessive or unregulated social media use. Lau (2017), Barton et al. (2018), and Caratıquıt and Caratıquıt (2023) observed that multitasking, procrastination, and cognitive overload often emerge as unintended consequences of frequent social media engagement. Habes et al. (2018a) confirmed that these negative patterns can diminish attention, lower motivation, and ultimately reduce academic achievement. These results highlight that social media's role in learning is not inherently positive, but is contingent upon how students regulate their time and interaction.

Cognitive and motivational factors have also been identified as important moderators of how students benefit from social media in education. Apuke et al. (2024) and Liu et al. (2022) argued that students with stronger cognitive skills and higher levels of self-efficacy are better positioned to manage information overload and capitalize on the collaborative benefits of online platforms. Boahene et al. (2019) and Qureshi et al. (2023) emphasized that social interaction plays a central role in shaping these learning experiences, particularly in encouraging innovation and sustained engagement. Together, these studies suggest that the

quality of interactions and the presence of strong self-regulation skills determine whether social media supports or hinders academic progress.

Despite the growing body of literature, several gaps remain. Researchers such as Sabah (2023) and Liu et al. (2022) called for longitudinal designs to assess the sustained impact of social media on academic outcomes. Others, including Alamri et al. (2020) and Boahene et al. (2019), noted the need for comparative studies across different platforms to better understand which tools are most effective in supporting learning. There is also limited attention to cultural and contextual factors, even though studies from Ghana (Boahene et al., 2019) and other regions indicate that local conditions significantly shape how students adopt and use social media for academic purposes. These gaps point to the importance of conducting context-specific research that moves beyond general trends to capture the unique ways in which social media influences learning outcomes in different educational systems

Table 2.1: Empirical Review of Related Studies

Author (Year)	Purpose	Framework and Context	Methods	Findings	Research Gaps
Alwagait et al. (2015)	To examine the impact of social media usage on students' academic performance in Saudi Arabia	Social media engagement and GPA correlation among students in Saudi Arabia	Survey of 108 students; analysis of time spent on social networks vs. GPA	No significant relationship between social media usage and GPA	Need for a deeper examination of study behaviours and quality of interactions
Ansari and Khan (2020)	To explore how social media facilitates collaborative learning	Social media use, interactivity with peers, which improves academic performance among students in India	Survey of 360 students in India; SEM analysis	Social media enhances interactivity with peers and teachers, leading to improved academic performance	Need for long-term impact analysis of social media collaboration on academic success
Apuke et al. (2022)	To investigate the role of cognitive ability in mitigating misinformation sharing on social media	Cognitive Learning Theory among social media users in Nigeria	Survey of 385 social media users in Nigeria	Information overload and social media fatigue contribute to misinformation sharing; cognitive ability moderates this effect	Need to explore other cognitive and psychological factors influencing misinformation spread
Barton et al. (2018)	To assess the effects of social media on attention, motivation,	Self-Regulated Learning Theory among students in the U.S.	Survey of 659 students in the U.S.	Social media usage negatively affects academic performance if not properly	Need for experimental studies to establish causality

	and academic performance			managed; motivation and attention strategies are key predictors of success	
Alamri et al. (2020)	To investigate how social media applications (SMAs) support collaborative learning in Saudi higher education	Technology Acceptance Model (TAM) and Constructivist Learning Theory among students in Saudi Arabia	Survey of 192 university students	SMAs improve peer collaboration, engagement, and knowledge sharing	Limited generalizability beyond Saudi Arabia; need for comparative studies
Sabah (2023)	To analyse social media use for academic purposes and multitasking behaviours	Social media collaboration impacting academic performance among students in Palestine	Survey-based data analysis	Social media for academic use can enhance performance, but multitasking leads to distraction and lower outcomes	Need to distinguish academic social media use from general engagement
Yu et al. (2022)	To examine the effects of mobile learning technologies and social media tools on student engagement and learning outcomes	Technology-enhanced learning in English language education among students in China	Quasi-experimental study with 101 students divided into three groups (mobile tech, social media, and traditional teaching)	Mobile learning technologies significantly improved student engagement and learning outcomes compared to social media tools and traditional methods	Need for research on serious games to further enhance engagement
Liu et al. (2022)	To analyse the effects of social media-based collaborative learning on student performance, with	Social Cognitive Theory and Technology Acceptance	Survey of 583 university students in China; analysed using SEM and	Perceived benefit, active learning, and interaction with peers significantly enhanced social media-based	Need for further examination of cultural and contextual factors influencing social media-based learning

	academic self-efficacy as a moderator	Model among students in China	hierarchical regression	collaborative learning; perceived ease of use and usefulness had no significant effect	
Lau (2017)	To assess the impact of social media usage and multitasking on academic performance	Cognitive Learning Theory and Time Displacement Hypothesis among Hong Kong students	Survey of 348 undergraduate students in Hong Kong	Social media multitasking negatively affects academic performance; using social media for non-academic purposes (e.g., gaming) also has a negative impact	Need for further exploration of long-term cognitive impacts of social media multitasking
Habes et al. (2018)	To investigate the role of modern media technology in improving collaborative learning among Jordanian university students	Constructivist Learning Theory among students in University of Jordan and Yarmouk University	Survey of students from University of Jordan and Yarmouk University	Significant correlations found between social media use and interaction with peers, teachers, and engagement in learning	Need for further research on the effectiveness of different social media platforms in educational settings
Sabah (2023)	To assess the impact of social media-based collaborative learning environments on students' outcomes in higher education	Technology Acceptance Model and Social Learning Theory among students in Palestine	Survey of 95 undergraduate students in Palestine; analysed using PLS-SEM	Social media use enhances perceived academic performance, learning satisfaction, and engagement	Need for longitudinal studies on sustained impact of social media use on academic outcomes
Boahene et al. (2019)	Examine how social media usage influences academic performance through academic self-efficacy	Social Learning Theory among students in Ghana	Survey of 808 tertiary students in Ghana	Social media use for education positively affects academic performance; innovation	Need for studies comparing different social media platforms' effectiveness in education

	and innovation characteristics			characteristics moderate this relationship	
Türel and Dokumaci (2022)	Investigate media and technology usage's effect on academic procrastination and achievement in adolescents	Cognitive Learning Theory among students in eastern part of Turkey	Quantitative analysis, 1278 middle/high school students, surveys	Higher media use increases procrastination, reducing academic achievement	Need to explore other factors affecting procrastination beyond media use
Mashoedi and Wahyuni (2024)	Examine social media's influence on learning at SDN Tambelang	Social Learning Theory among elementary students in SDN Tambelang	Qualitative, interviews, observations, content analysis	Social media aids collaboration but distracts from focus	Limited focus on specific types of collaboration
Qureshi et al. (2023)	Assess the impact of social factors on collaborative learning and academic performance	Constructivist Theory among students in Iqra University	Structural equation modelling (SEM), surveys	Social interaction enhances engagement and academic outcomes	More research needed on types of social interactions that optimize learning
Opoku-Asare and Siaw (2015)	Investigate academic performance disparities between rural and urban high schools	Educational Resource Theory among rural and urban high school students in Ghana	Mixed-methods, interviews, observations, questionnaires	Urban schools outperform rural due to better resources and teacher quality	Need for further studies on rural-urban digital education disparities
Ansari and Khan (2020)	Examine social media and mobile devices in fostering collaborative learning and interactivity	Collaborative Learning Theory among students in eastern India	Survey, 360 students, structural equation modelling (SEM)	Social media positively affects interactivity, engagement, and academic performance	Limited research on long-term effects of mobile-based collaboration
Ramzan et al. (2023)	Explore social media's impact on	Sociocultural Theory among	Quantitative study, 412 secondary students	Social media positively impacts ESL skills but requires balanced usage	Need to explore long-term language acquisition effects

	ESL learners' performance	students in Karachi			
Bjorklund et al. (2004)	To examine how faculty interaction and feedback affect engineering students' perceived gains in skills and attitudes.	Engineering design courses within Penn State's ECSEL coalition, focusing on collaborative learning among first-year students	Surveyed 1,555 first-year students across 19 campuses; factor analysis and multiple regression.	Instructor interaction and feedback strongly predicted gains in communication, problem-solving, occupational awareness, and competence; collaborative learning also contributed.	Limited to self-reported perceptions; need for longitudinal evidence and diverse contexts.
Hu et al. (2015)	To analyse how student-faculty interaction mediates between engagement factors and educational outcomes in Taiwanese residential colleges.	Context of Shuyuan (Chinese academies) and Western residential colleges; student engagement and National Survey of Student Engagement framework in Taiwan	SEM with 724 students from four universities; bootstrapping for mediation effects.	Found student-faculty interaction mediates the link between engagement and educational gains; strong empirical support for interaction quality.	Context limited to Taiwan; need to generalize to non-residential settings and different cultures.
Komarraju et al. (2010)	To explore how student-faculty interactions shape college students' academic self-concept, motivation, and performance.	U.S. college students; socio-psychological view of faculty influence on student development.	Survey data and correlational analysis (details inferred); likely cross-sectional.	Positive link between quality interaction and students' self-concept, motivation, and GPA.	Correlational design; causal mechanisms and diversity across institutions need further study.

Sher (2009)	To assess how student-instructor and student-student interactions affect learning and satisfaction in online learning.	Web-based courses in a private U.S. university; technology-mediated interaction; Moore's transactional distance framework.	Web survey of 208 students; regression analyses of interaction effects on learning and satisfaction.	Both forms of interaction significantly predict perceived learning and satisfaction; instructor interaction slightly stronger.	Limited generalizability beyond the institution; needs exploration across disciplines and tech platforms.
Sivakumar, R. (2020)	To examine whether social media use affects academic performance of secondary school students in Cuddalore District, India.	Social media as a tool for communication, collaboration and academic engagement; study contextualized within Indian secondary education.	Survey design; 1000 students randomly sampled; quiz marks before and after social media adoption analysed using descriptive statistics and ANOVA.	Social media has a positive impact on students' academic performance. Higher daily usage (5–6 hours) correlates with higher performance. WhatsApp use shows highest performance among platforms.	Contrasts prior studies that mostly report negative correlation; localised to one Indian district—needs broader cross-cultural replication; primarily descriptive—causal mechanisms unexplored; long-term effects not measured.

2.4.2 Gaps in the literature

Over the last decade, research has increasingly focused on how social media shapes learning, collaboration, and academic performance in higher education. While this body of work has deepened understanding, important gaps remain, particularly in contexts such as Ghana, where infrastructure, teaching methods, and institutional practices differ significantly from those in Western and Asian settings. Addressing these gaps is essential to developing a more contextually relevant understanding of social media's role in academic life.

One key limitation concerns the inconsistent findings on the relationship between social media usage and academic performance. While some studies, such as Alwagait et al. (2015), Barton et al. (2021), and Lau (2017), highlight the risks of multitasking and distraction, others, including Sivakumar (2022) and Sabah (2023), suggest that purposeful and structured use can enhance student outcomes. These contrasting results indicate that measuring usage only in terms of time spent is inadequate. Constructs such as perceived usefulness and perceived ease of use, as advanced in the Technology Acceptance Model (TAM), may offer a more reliable lens through which to explain why and how students adopt social media for academic purposes. Although Alamri et al. (2020) and Liu et al. (2022) have applied TAM in certain contexts, the findings remain limited and cannot be generalised across diverse educational systems.

Another gap lies in the pathways linking social media use to different forms of interaction. Existing research demonstrates that social media can strengthen peer collaboration (Ansari & Khan, 2020; Habes et al., 2018; Sabah, 2023). However, relatively few studies examine its role in supporting both student–student and student–faculty interactions in digital learning environments. Although

studies such as Hu et al. (2015) and Sher (2009) confirm the importance of faculty interaction in improving motivation and learning, much of this evidence is rooted in traditional face-to-face settings rather than online or blended platforms. With social media increasingly used for academic communication, mentorship, and collaborative tasks, it is necessary to assess whether these interactions meaningfully extend beyond the classroom.

A further limitation concerns the cultural and contextual scope of existing work. Much of the empirical evidence originates from North America, Asia, and the Middle East (Alamri et al., 2020; Liu et al., 2022), regions where technological infrastructure and institutional support for digital learning are relatively advanced. By contrast, sub-Saharan Africa has received less scholarly attention, although students in countries such as Ghana rely heavily on mobile devices and social media for learning. Studies conducted in Ghana (Kolan & Dzandza, 2018; Nurudeen et al., 2023; Roberts, 2020) have provided valuable descriptive insights but have not fully examined how social media-enabled collaboration translates into measurable academic outcomes.

Finally, theoretical fragmentation also persists. While TAM has been widely used to study technology adoption, and Self-Determination Theory (SDT) has been employed to explore student motivation, few studies combine these perspectives. Most research treats technology acceptance and psychological motivation as separate domains, limiting the ability to explain how both cognitive and motivational factors interact to shape academic performance. A more integrated framework that draws on both TAM and SDT can provide a richer and more comprehensive understanding of social media's impact on learning within higher education.

2.4.3 Chapter summary

This chapter reviewed the evolution of social media from its early stages to its current role as a tool for interaction, collaboration, and knowledge sharing in higher education. It highlighted the major types of social media platforms and examined their educational applications, particularly within Ghanaian universities, where they provide opportunities for peer collaboration, access to resources, and extended faculty–student communication. The chapter also acknowledged the challenges that accompany these opportunities, including distraction, inappropriate use, and cyberbullying.

The empirical review demonstrated that while social media has the potential to enhance collaboration and improve academic performance, its effectiveness depends on context, purpose of use, and students' ability to regulate their engagement. The review further identified several important gaps in the literature, such as inconsistent findings on the relationship between usage and performance, insufficient attention to both student–student and student–faculty interactions, and the lack of evidence from sub-Saharan African contexts. Finally, it emphasised the need for a more integrated theoretical approach that combines TAM and SDT to capture both acceptance and motivational dimensions of social media use.

CHAPTER THREE

THEORY AND HYPOTHESIS DEVELOPMENT

3.1 Chapter Overview

This chapter presents the theoretical and conceptual foundations underpinning the study on how social media usage influences collaborative learning and academic performance among students at the University of Ghana. It begins with a review of the Technology Acceptance Model and Self-Determination Theory, followed by a justification for their relevance to this research. The conceptual framework illustrates the interconnections among key variables, while the hypotheses development section articulates the expected relationships. The chapter concludes with a summary, providing a coherent basis for the subsequent methodology and analysis.

3.2 Theoretical framework

3.2.1 Technology Acceptance Model

The Technology Acceptance Model (TAM) is one of the most influential frameworks developed to explain and predict user behaviour toward information technology adoption. Initially introduced by Davis (1986) and further refined in Davis (1989), TAM emerged as an adaptation of Ajzen and Fishbein's Theory of Reasoned Action (TRA), specifically tailored to elucidate how users come to accept and use a technology (Alalwan et al., 2019b). The central premise of TAM is that two particular beliefs, perceived usefulness and perceived ease of use, determine an individual's attitude towards using a technological system, which subsequently influences their behavioural intention to use, and ultimately, their actual use of the system.

Perceived usefulness is defined as the degree to which a person believes that using a particular system would enhance their job performance (Al-Menayes, 2015). It reflects the pragmatic

benefits a user expects to gain by adopting the technology, such as increased efficiency, productivity, or performance quality. This construct originates from the notion that people tend to use or not use an application to the extent they believe it will help them perform their tasks better. Numerous empirical studies have validated perceived usefulness as the most significant predictor of user acceptance across various technological contexts (Alamri et al., 2020b).

Perceived ease of use refers to the degree to which a person believes that using a particular system would be free of effort (Ansari & Khan, 2020c). This dimension captures the user's assessment of the expected cognitive and physical effort involved in learning and operating the system. The underlying rationale is that even if a technology is perceived to be useful, if it is too complex or cumbersome to operate, users may resist its adoption. Ease of use influences perceived usefulness as well; when a system is easier to use, it is more likely to be perceived as useful because it allows the user to achieve desired results with less effort (Bozanta & Mardikyan, 2017). The model posits a causal chain: external variables influence perceived usefulness and perceived ease of use; these beliefs shape the individual's attitude toward using the technology; attitude then affects the behavioural intention to use, which ultimately determines actual system usage (Alalwan et al., 2019). Over time, empirical research has provided robust support for the fundamental relationships proposed in TAM, confirming that perceived usefulness and perceived ease of use are consistently significant predictors of technology acceptance across diverse settings such as e-learning and collaborative learning (Sahoo & Khuntia, 2024).

Despite its widespread acceptance and empirical support, TAM has not been without criticism. One notable critique is its oversimplification of the complex and multifaceted nature of human

behaviour concerning technology use (Alalwan et al., 2019). Critics argue that by focusing predominantly on cognitive perceptions, the model neglects social, cultural, and organisational factors that can significantly influence technology acceptance. For instance, factors such as subjective norms, facilitating conditions, and individual differences like computer self-efficacy and anxiety have been identified as important predictors in later models that sought to integrate and extend TAM's constructs (Alamri et al., 2020).

Another limitation often highlighted is TAM's assumption of a unidirectional, rational decision-making process. It presumes that individuals make logical evaluations based on utility and effort without sufficiently accounting for emotional, habitual, or situational influences that may override cognitive appraisals (Al-Menayes, 2015). Consequently, several extensions and modifications of TAM have been proposed to address these shortcomings. TAM2 introduced social influence and cognitive instrumental processes, while TAM3 integrated factors like computer anxiety and experience. These refinements aim to provide a more holistic understanding of user acceptance behaviour (Alalwan et al., 2019). Nevertheless, the elegance and parsimony of TAM continue to make it a popular baseline model for examining technology adoption. Its constructs are easily operationalised and adaptable to various contexts, enabling researchers and practitioners to identify leverage points for promoting the adoption and effective use of new technologies (Sahoo & Khuntia, 2024). In the realm of information systems research, TAM remains a foundational theory that has inspired extensive empirical inquiry and theoretical development.

The Technology Acceptance Model provides a theoretically grounded yet practical framework for analysing user acceptance of technology. By isolating perceived usefulness and perceived ease of

use as primary determinants, it offers a focused lens through which to examine the cognitive evaluations driving user behaviour. While acknowledging its limitations and the need for context-specific extensions, TAM's enduring relevance attests to its fundamental contribution to understanding and facilitating technology adoption.

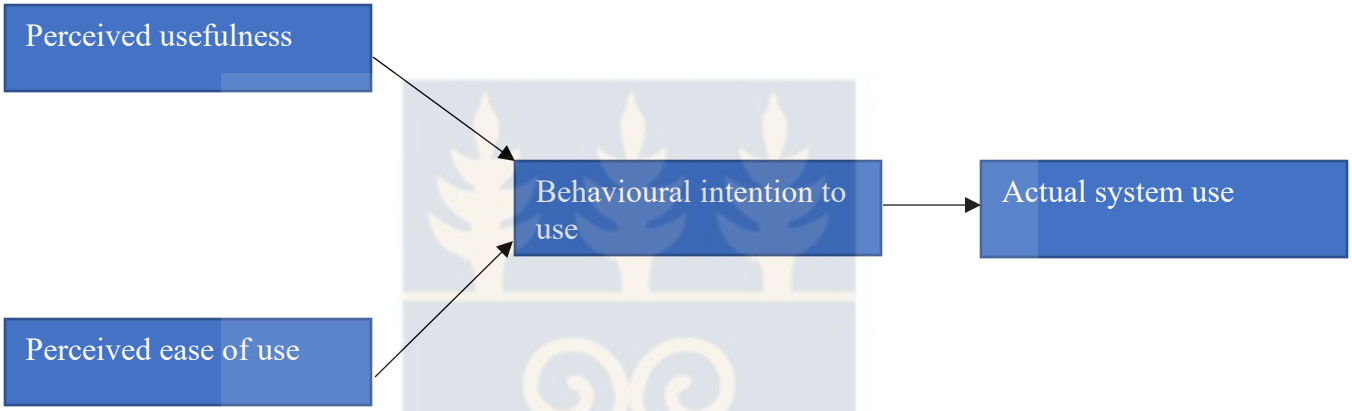

Figure 3.1: Technology Acceptance Model

3.2.2 Self-Determination Theory

SDT was developed by psychologists Ryan and Deci (2024), is a comprehensive framework for understanding human motivation. The theory focuses on the intrinsic and extrinsic factors that influence an individual's behaviour, with an emphasis on the importance of autonomy, competence, and relatedness for fostering intrinsic motivation and optimal development (Ndudi et al., 2023). SDT suggests that humans have an inherent drive to grow, learn, and integrate their experiences, but this drive is influenced by the social and environmental conditions in which they are placed (Bandhu et al., 2024). When these conditions support autonomy, competence, and relatedness, individuals are more likely to experience intrinsic motivation, which is the most powerful form of motivation for personal growth and performance (Ndudi, 2023).

At the heart of SDT are three basic psychological needs (Guay, 2022). Autonomy refers to the need to feel in control of one's actions and decisions, to act in ways that align with one's values and interests. Competence is the need to feel effective and capable in one's activities, gaining mastery over challenges and developing skills (Ryan & Deci, 2024a). Relatedness involves the need to feel connected to others, to experience a sense of belonging and meaningful social interactions (Knee & Browne, 2023). When these three needs are satisfied, individuals are more likely to engage in behaviours that are self-motivated and aligned with their personal goals, leading to greater well-being and enhanced performance (Guay, 2022).

A key argument of SDT is that motivation exists on a continuum, ranging from intrinsic motivation (engaging in an activity for its inherent enjoyment) to extrinsic motivation (engaging in an activity for an external reward or outcome). Intrinsic motivation, according to SDT, is the most desirable form of motivation because it is associated with greater satisfaction, persistence, and creativity (Huang et al., 2019). In contrast, extrinsic motivation, while effective in certain situations, tends to be less sustainable and can undermine intrinsic motivation if it leads to dependency on external rewards (Huang et al., 2019). For example, when students engage in academic tasks out of a genuine interest or passion, rather than for grades or recognition, they are more likely to achieve deeper learning and greater academic success.

SDT has broad applications in educational settings, particularly in how teachers and instructors design learning environments (Huang et al., 2019). According to SDT, when students perceive that their autonomy is supported (e.g., by having a say in their learning process or being given

opportunities for self-directed learning), they are more likely to engage in academic tasks intrinsically (Guay, 2022). Similarly, when students are given feedback that promotes a sense of competence, highlighting their progress and mastery of material, they are more motivated to continue learning (Huang et al., 2019). Finally, fostering a sense of relatedness, such as through collaborative learning or supportive teacher-student relationships, helps students feel connected and engaged, further enhancing their motivation (Wang et al., 2019).

The SDT provides a lens through which educators can understand the factors that drive students' motivation and engagement (Guay, 2022). By promoting environments that satisfy students' psychological needs for autonomy, competence, and relatedness, SDT suggests that learning outcomes can be significantly improved (Wang et al., 2019). This is particularly relevant in the context of social media collaboration, where students' intrinsic motivation can be fostered through meaningful interactions, self-directed learning opportunities, and a supportive peer environment (Huang et al., 2019).

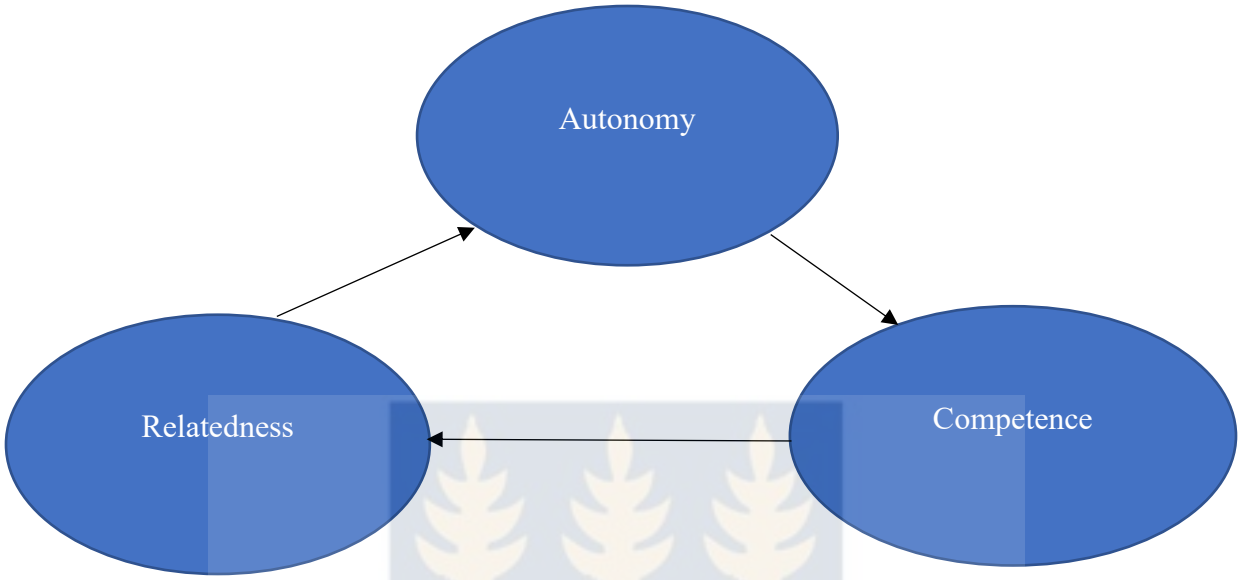

Figure 3.2: Self-determination theory

Source: Ryan and Deci (2024)

3.2.4 Justification of the Theories

The decision to ground this study in the Technology Acceptance Model (TAM) and Self-Determination Theory (SDT) is both theoretically sound and contextually appropriate for higher education research. Social media has become an indispensable part of students' academic lives, and understanding its role requires attention to both cognitive and motivational dimensions of technology use. TAM provides the basis for explaining how students evaluate and adopt social media platforms, while SDT highlights the psychological needs that sustain their engagement and shape collaborative behaviours. Together, the two theories create a framework that reflects the realities of how students in contemporary universities interact with technology to achieve academic outcomes.

TAM, originally developed by Davis (1989), has been widely applied to examine technology acceptance across educational contexts (Alalwan et al., 2019; Alamri et al., 2020). It posits that perceived usefulness (PU) and perceived ease of use (PEOU) are the primary beliefs influencing users' intentions, which in turn determine actual usage behaviour. In the present study, PU represents students' perceptions that social media platforms help them complete academic tasks efficiently, while PEOU reflects the extent to which they find these platforms easy to navigate and apply in their learning. When students view social media as both beneficial and user-friendly, they are more inclined to adopt it for activities such as group discussions, resource sharing, and coordination of assignments. Research by Ansari and Khan (2020) and Sahoo and Khuntia (2024) affirms that these perceptions strongly predict actual usage in educational environments, making TAM a relevant foundation for investigating adoption and use.

While TAM explains the rational and cognitive drivers of adoption, it does not sufficiently account for the motivational factors that influence sustained use and collaborative engagement. SDT, articulated by Ryan and Deci (2020), complements this limitation by emphasizing that human behaviour is guided by the fulfilment of autonomy, competence, and relatedness. These three needs are evident in how students use social media for academic purposes. Autonomy is reflected in students' ability to decide when and how they participate in online academic interactions. Competence is realised when they contribute knowledge, clarify concepts, and demonstrate mastery through digital collaboration. Relatedness emerges as students use platforms such as WhatsApp, Telegram, and Facebook to build connections with peers and lecturers, creating a sense of community that enhances learning. Empirical studies, including those by Hosen et al. (2021)

and Rogers and Nehme (2019), show that the satisfaction of these needs through social media use leads to greater motivation and stronger academic engagement.

Integrating TAM and SDT, this study brings together two complementary perspectives. TAM captures the evaluative processes through which students adopt social media, while SDT provides insight into the deeper psychological motivations that sustain their active participation. The combination of these theories ensures that the framework is not limited to the technical qualities of social media but also accounts for the social and motivational forces that shape collaborative learning and academic performance. This theoretical integration, therefore, positions the study to generate insights that are both empirically grounded and practically relevant for higher education.

3.3 Conceptual Framework

The conceptual framework for this study draws upon the Technology Acceptance Model (TAM) and Self-Determination Theory (SDT) to provide a coherent explanation of how social media usage contributes to collaborative learning and academic performance among university students. The model highlights the motivational drivers that shape students' adoption of digital platforms, the behavioural pathways through which social media fosters interaction, and the academic outcomes that emerge from these interactions.

The Technology Acceptance Model identifies Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) as the primary determinants of technology adoption (Davis, 1989). In the context of higher education, PU refers to the extent to which students believe that social media platforms can improve their learning efficiency, enhance collaboration, and support academic productivity

(Alamri et al., 2020). PEOU, in contrast, reflects students' perceptions of the effort required to use such platforms. When platforms are easy to navigate, students are more inclined to adopt them for meaningful academic engagement (Alalwan et al., 2019). Together, PU and PEOU shape Social Media Actual Usage (SMAU), defined as the extent and manner in which students employ social media tools such as WhatsApp, Facebook, and Telegram for academic communication, peer collaboration, and knowledge sharing.

SMAU is conceptualised in this framework as a mediating construct that channels the influence of PU and PEOU into collaborative learning outcomes. Through consistent usage, social media enhances two critical dimensions of interaction. The first is Interaction Among Students (IAS), which involves peer-to-peer collaboration, group discussions, and the exchange of academic resources. Prior studies affirm that student-to-student interaction fosters deeper learning and collective problem-solving, ultimately improving academic performance (Ansari & Khan, 2020; Jacinto et al., 2021). The second is Student Interaction with Faculty Members (SIFM), which captures communication between students and lecturers for academic guidance, clarification of complex concepts, and feedback. Evidence suggests that frequent and meaningful faculty interaction supports student motivation, enhances comprehension, and strengthens academic achievement (Hu et al., 2015; Komarraju et al., 2010).

Finally, the framework positions Academic Performance as the outcome of these processes. Academic performance is influenced both directly by SMAU and indirectly through enhanced student–student and student–faculty interactions. This perspective aligns with SDT's emphasis on

relatedness and competence, where positive social connections and effective feedback mechanisms create conditions that improve students' academic outcomes (Ryan & Deci, 2020).

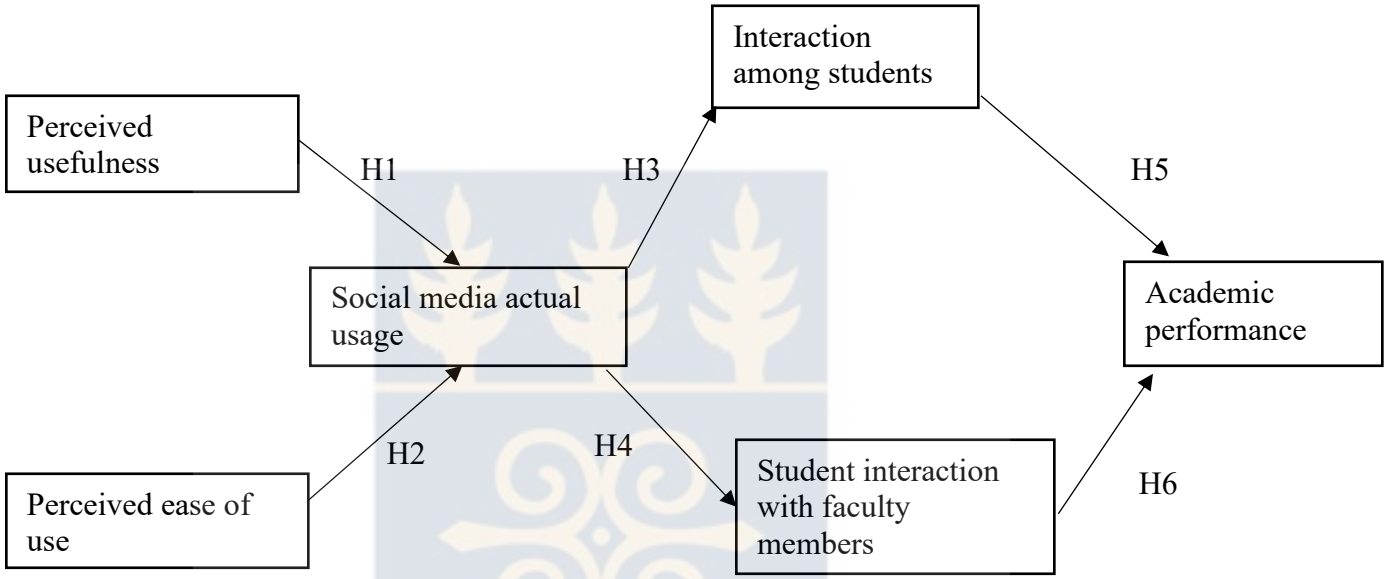

Figure 3.3: Conceptual Framework

Source: Author's construct (2025)

3.4 Hypotheses Development

In this section, the hypotheses for the study are developed based on the existing literature.

3.4.1 Perceived Usefulness as a Predictor of Social Media Use

Perceived usefulness is regarded as one of the most important determinants of technology adoption in the Technology Acceptance Model (TAM). Davis (1989) originally conceptualised it as the degree to which an individual believes that the use of a particular system will improve their performance in a given task. Within higher education, this construct reflects students' evaluation of the tangible benefits they derive from incorporating social media into their academic routines,

such as gaining quicker access to information, improving collaboration, or enhancing productivity in completing assignments. A growing body of empirical research highlights the relevance of this belief in shaping students' adoption of digital tools. Alamri et al. (2020) found that students who perceived social media platforms as beneficial were more likely to engage actively in peer discussions, resource sharing, and group projects. Similarly, Ansari and Khan (2020) reported that learners who considered platforms such as WhatsApp and Facebook useful for clarifying academic concepts and coordinating group work were more inclined to integrate them into their study practices. Further evidence by Sahoo and Khuntia (2024) indicated that when students judged social media to be academically advantageous, their level of involvement in online collaborative tasks increased significantly, which in turn promoted deeper engagement with course material. These findings reinforce TAM's central proposition that perceived usefulness is a key driver of behavioural intention and actual usage. In line with this reasoning, the study hypothesises that:

H_1: Perceived usefulness has a positive influence on social media usage among students.

3.4.2 Perceived Ease of Use and Its Role in Shaping Social Media Engagement

The second major construct of the Technology Acceptance Model (TAM) is perceived ease of use, which refers to the degree to which an individual believes that using a particular system requires minimal effort (Davis, 1989). In the educational setting, this construct reflects how straightforward and user-friendly students find social media platforms when engaging in communication, collaboration, and knowledge sharing. When a platform is intuitive and easy to navigate, students are more willing to integrate it into their academic activities, since fewer technical barriers allow them to focus on the learning process itself. Empirical studies strongly support this view. Bozanta and Mardikyan (2017) observed that students were more likely to participate in online discussions

when the tools used were simple and required little training. Ansari and Khan (2020) also emphasised that ease of use played an important role in sustaining student engagement, as learners consistently returned to platforms that did not present technical difficulties when working on group assignments. Sabah (2023) further noted that students who perceived platforms such as WhatsApp or Facebook as easy to operate were less likely to abandon them, even when other digital tools were available, because convenience reduced hesitation and increased confidence in adoption. Together, these findings affirm that perceived ease of use facilitates consistent engagement by lowering entry barriers to technology. On this basis, the following hypothesis is proposed:

H_2: Perceived ease of use has a positive influence on social media usage among students.

3.4.3 How Social Media Use Shapes Peer Interaction

Social media usage, in the context of higher education, refers to the extent to which students actively employ platforms such as WhatsApp, Telegram, and Facebook to exchange information, collaborate on assignments, and engage in academic discussions (Alamri et al., 2020). These platforms extend learning beyond classroom boundaries, allowing students to maintain continuous dialogue with peers, clarify complex topics, and share academic resources in real time. The role of social media in facilitating student-to-student interaction is well established in the literature. Ansari and Khan (2020) reported that students who made active use of social media experienced higher levels of collaboration with their peers, since these platforms created a flexible environment for discussions outside the lecture hall. Similarly, Habes et al. (2018) found that frequent engagement with social media platforms significantly strengthened peer collaboration, resulting in deeper group work and improved academic engagement. Sahoo and Khuntia (2024) added that actual usage of digital platforms expanded the scope of peer conversations, enabling the creation of

learning networks that supported both academic and social development. These findings illustrate that social media serves as more than a tool for communication; it is also a medium for building collective understanding and support among students. In light of this evidence, the following hypothesis is advanced:

H_3: Social media usage has a positive influence on interaction among students.

3.4.4 Social Media Use and Its Impact on Student–Faculty Engagement

Interaction between students and faculty members has long been recognised as a cornerstone of academic success, as it facilitates feedback, mentorship, and clarification of course content (Komarraju et al., 2010). Traditionally, such exchanges were limited to formal spaces such as classrooms, office hours, or scheduled meetings. However, with the widespread use of social media platforms, these opportunities for engagement have expanded considerably. Social media now provides flexible and immediate channels for students to approach lecturers, pose academic questions, and receive guidance beyond the constraints of time and place.

Habes et al. (2018) demonstrated that social media platforms such as WhatsApp and Facebook function as important bridges between students and instructors by enabling real-time communication. Their study highlighted how direct access to faculty through these platforms enhanced academic support and encouraged continuous dialogue, thereby reducing the communication gap that often exists in traditional classroom environments. Similarly, Ansari and Khan (2020) observed that the integration of social media tools into academic activities improved the quality of student–faculty interaction. They noted that students used these platforms to seek

feedback on assignments, clarify doubts, and maintain academic discussions outside of lectures, which significantly improved the learning experience.

The importance of such engagement is reinforced by evidence from Sher (2009), who found that effective student–faculty communication in online learning environments was a critical predictor of satisfaction and academic achievement. This suggests that social media usage not only broadens access to faculty but also strengthens the relational aspect of education by promoting a culture of continuous mentorship. By enabling timely guidance and direct communication, social media transforms traditional faculty–student interactions into dynamic and ongoing exchanges that can substantially enhance the learning process. Drawing from this evidence, the study proposes the following hypothesis:

> *H_4: Social media usage has a positive influence on student interaction with faculty members.*

3.4.5 Peer Interaction as a Pathway to Academic Success

Student interaction plays a central role in shaping the quality of learning experiences and academic outcomes. Interaction among students often occurs through discussions, group projects, study circles, and informal peer exchanges, all of which create opportunities for collaborative learning. According to Hosen et al. (2021), such interaction fosters critical engagement with academic content, enabling students to share knowledge, challenge one another's perspectives, and collectively build a deeper understanding of course material. By facilitating peer-to-peer dialogue, interaction enhances comprehension, stimulates motivation, and contributes directly to improved performance in academic assessments.

The significance of this dynamic has been demonstrated across diverse educational contexts. Sahoo and Khuntia (2024) reported that students who engaged in frequent peer discussions and collaborative study activities achieved higher grades and expressed greater satisfaction with their academic experiences compared to peers who relied on independent study. Their findings underscore the point that interaction does more than provide social support; it actively nurtures intellectual growth by broadening the scope of perspectives students are exposed to. Similarly, Sabah (2023) showed that peer collaboration cultivated a supportive academic environment where students were encouraged to seek clarification, exchange resources, and remain engaged throughout the learning process. This atmosphere of collective support and accountability proved vital for sustaining focus and achieving higher levels of academic success.

The benefits of peer interaction are consistent with collaborative learning theories, which emphasize that knowledge is co-constructed through shared activities rather than absorbed in isolation (Jacinto et al., 2021). When students are encouraged to engage in meaningful exchanges with their peers, they develop essential skills such as critical thinking, problem-solving, and the ability to articulate complex ideas. These skills directly translate into better performance across multiple academic tasks, from examinations to project-based evaluations. Therefore, the study hypothesises that;

H_5: Student interaction has a positive influence on academic performance.

3.4.6 Faculty Support and Its Contribution to Student Achievement

Interaction with faculty members is a critical determinant of student success, as it provides learners with access to mentorship, clarification of concepts, and academic guidance. In contemporary higher education, these exchanges extend beyond formal classroom settings into digital spaces, with social media offering new avenues for continuous dialogue between students and instructors. Habes et al. (2018) found that social media platforms facilitated more frequent and flexible communication with faculty, enabling students to seek feedback and support outside lecture hours. Such interactions strengthen students' sense of academic connectedness and contribute to enhanced motivation and persistence in their studies.

Recent studies also affirm the importance of student–faculty engagement for academic outcomes. Qureshi et al. (2023) demonstrated that when faculty members actively engaged with students through digital platforms, learners reported higher levels of satisfaction and better performance. Similarly, Liu et al. (2022) highlighted that communication with faculty via online channels provided students with timely academic feedback, which in turn improved their confidence and academic achievement. These findings suggest that effective interaction with faculty not only enhances understanding of subject content but also nurtures a supportive learning environment that directly influences academic performance. Based on this evidence, the following hypothesis is proposed:

$H_{6:}$ Student interaction with faculty members has a positive influence on academic performance.

3.5 Chapter Summary

This chapter outlined the theoretical and conceptual foundations underpinning the study of how social media influences collaborative learning and academic performance among students at the University of Ghana. It began with a discussion of the Technology Acceptance Model (TAM) and Self-Determination Theory (SDT), explaining how these frameworks complement one another in examining both the cognitive evaluations and motivational drivers of social media use in academic contexts. The justification of the theories demonstrated why TAM and SDT are particularly well-suited for this research, showing how they illuminate the processes through which students adopt, engage with, and benefit from social media platforms for educational purposes.

The chapter also presented the conceptual framework, which mapped the relationships between key constructs, including perceived usefulness, perceived ease of use, actual social media usage, peer interaction, faculty interaction, and academic performance. This framework established a logical structure for analysing how perceptions of technology shape actual use, and how that use, in turn, fosters interaction and influences learning outcomes. The hypotheses development section elaborated on these connections by formulating testable propositions derived from the reviewed literature, each reflecting a clear pathway between the constructs. By linking established theoretical models with empirical evidence, the chapter provided a coherent foundation for the research methodology and analysis that follow.

CHAPTER FOUR

RESEARCH METHODOLOGY

4.1 Chapter Overview

Chapter Four outlines the research methodology adopted to investigate the role of social media usage in enhancing collaborative learning and academic performance among students at the University of Ghana. This chapter describes the philosophical assumptions, research design, sampling strategy, data collection procedures, analysis techniques, and ethical considerations that collectively ensure the study's rigour and relevance. By systematically detailing each methodological choice, this chapter demonstrates how the study aligns with its theoretical framework and research objectives. The approach adopted provides a clear roadmap for collecting and analysing data to test the hypothesised relationships and generate evidence-based conclusions.

4.2 Research Design

The research design represents the blueprint that connects the philosophical orientation of the study to the methodological tools employed for collecting and analysing data. In this study, the choice of research design was guided by the need to establish clear causal relationships among key constructs, namely perceived usefulness, perceived ease of use, social media actual usage, interaction among students, interaction with faculty members, and academic performance. The study is grounded in the positivist paradigm, which emphasises that social reality is objective and can be understood through systematic observation and measurement (Park et al., 2020). Positivism assumes that reliable knowledge is derived from quantifiable evidence rather than subjective interpretation (Comte & Bridges, 2015). This orientation aligns with the objectives of the study, which seeks to examine how students' perceptions of social media tools translate into actual use

and, subsequently, how such use shapes collaborative learning and academic outcomes. By adopting this worldview, the research ensures that conclusions are based on verifiable data rather than the researcher's personal assumptions.

Within this philosophical position, an explanatory research design was selected. Explanatory designs are appropriate when the aim is to investigate cause-and-effect relationships between variables (Næss, 2016). In this context, the design makes it possible to move beyond description and instead test specific hypotheses derived from established theories such as the Technology Acceptance Model and Self-Determination Theory. For example, the study investigates whether perceived usefulness and perceived ease of use directly influence students' actual usage of social media and whether such usage enhances their interactions with peers and faculty, leading to improved academic performance. These hypotheses require a framework capable of testing causal propositions systematically, which makes the explanatory design particularly suitable (Zheng, 2015).

The methodological approach adopted is quantitative, reflecting the study's reliance on measurable constructs and statistical analysis. Quantitative research involves the collection of numerical data through structured instruments such as questionnaires, allowing hypotheses to be tested rigorously and findings to be generalized to a wider population (Creswell & Creswell, 2018). Constructs such as perceived usefulness, ease of use, usage frequency, peer interaction, faculty interaction, and academic performance can all be captured through validated survey items. By collecting responses from a sufficiently large sample of students, the study enhances both the statistical robustness and the external validity of its findings. The quantitative approach is further justified by its

compatibility with the positivist paradigm, as it facilitates the use of inferential techniques to assess the strength and direction of relationships between constructs (Creswell & Clark, 2017).

The study employs a cross-sectional design for data collection. A cross-sectional approach captures data at a single point in time, offering a practical method for understanding current patterns of social media use and their academic implications within a defined population (Zheng, 2015). This is particularly useful in university settings where student behaviours and schedules may vary across semesters. By focusing on one academic period, the study provides a reliable snapshot of how social media is being integrated into learning and interaction at the University of Ghana. Although cross-sectional designs do not establish causality as firmly as longitudinal studies, this limitation is addressed by embedding the research within theoretical models that already establish the logical direction of relationships between constructs (Cummings, 2018). The positivist paradigm, explanatory research design, quantitative approach, and cross-sectional framework form a coherent methodological strategy. This alignment ensures that the study remains focused on testing theoretically derived hypotheses with empirical precision. In doing so, the research contributes to validating the applicability of TAM and SDT in a higher education context, while also generating insights relevant to educators and policymakers seeking to leverage social media for improved learning outcomes.

4.3 Target Population

The target population for this study consists of undergraduate and postgraduate students enrolled at the University of Ghana (UG). According to recent institutional records, the university has an estimated student population of 76,013, comprising individuals across different levels of study and

diverse academic disciplines (University of Ghana, 2025b). This large and varied student body provides an appropriate context for examining the role of social media in supporting collaborative learning and academic performance. The inclusion of both undergraduate and graduate students ensures that the perspectives captured reflect differences in maturity, academic workload, and patterns of social media engagement.

The University of Ghana represents a particularly suitable setting because of the central role that social media platforms play in the daily lives of its students. Evidence from earlier studies indicates that students at UG actively use platforms such as WhatsApp, Facebook, and Telegram not only for social interaction but also for academic collaboration, resource sharing, and communication with peers and faculty (Kolan & Dzandza, 2018). This integration of social media into learning environments makes it possible to explore the specific relationships proposed in the study's framework, including how perceptions of usefulness and ease of use shape actual usage, and how such usage enhances interaction and performance. By focusing on this population, the study captures experiences that are both contextually relevant and representative of broader trends in digital learning within sub-Saharan Africa.

Beyond its size and diversity, the University of Ghana has made deliberate efforts to integrate technology into teaching and learning, providing a conducive environment for investigating the research questions. The institution's ongoing adoption of digital tools for academic delivery creates opportunities for students to engage with social media platforms in structured and unstructured ways, thereby aligning with the constructs under investigation (University of Ghana, 2025a). The choice of this population not only strengthens the validity of the study but also ensures

that its findings offer practical insights that can inform institutional strategies and contribute to improving teaching and learning practices.

4.4 Sampling Technique and Sampling Size

The selection of an appropriate sampling strategy is essential to ensure that the data collected accurately reflects the target population and provides results that are both meaningful and reliable. In this study, a combination of convenience sampling and purposive sampling is employed. These non-probability methods are appropriate given the study's objectives and the practical considerations of working within a large university environment. Convenience sampling involves selecting respondents who are easily accessible and willing to participate within the study period (Sedgwick, 2013). This approach is particularly suited to the University of Ghana, where students can be reached through lectures, online learning platforms, and active social media groups. The method offers efficiency in data collection, which is vital in the context of time and resource constraints (Simkus, 2022).

Purposive sampling complements this approach by deliberately selecting participants who meet inclusion criteria directly relevant to the research questions. Specifically, the study focuses on students who actively use social media for academic and collaborative purposes, such as participating in class WhatsApp groups, departmental platforms, or direct communication with peers and faculty members. By targeting such students, the study ensures that responses are informed by real engagement with social media in academic contexts. This strengthens the depth and relevance of the data collected, as the selected participants have first-hand experience with the constructs under investigation, including perceived usefulness, perceived ease of use, actual social

media usage, interaction among students, interaction with faculty members, and academic performance (Campbell et al., 2020; Thomas, 2022).

Both convenience and purposive sampling present advantages and limitations. Convenience sampling is cost-effective and allows researchers to access a large number of respondents in a relatively short period (Stratton, 2021). Purposive sampling, on the other hand, enhances validity by ensuring that the sample includes only those who can provide relevant insights. However, these approaches do not rely on random selection, and as such, generalisability to the entire student population is limited (Etikan et al., 2016). Despite these limitations, the use of both techniques is justified because the goal of the study is not universal generalisation but rather the testing of theoretical relationships among students who actively use social media for academic purposes within the University of Ghana.

The sample is drawn from undergraduate and postgraduate students across faculties and departments. This diversity ensures that students from different academic backgrounds and levels of study are included, thereby capturing a broad range of experiences. The sampling unit is each student who satisfies the inclusion criteria and voluntarily agrees to participate. These criteria guarantee that all participants are able to provide meaningful responses related to the study constructs. Determining the appropriate sample size is critical for ensuring the reliability and statistical significance of the study's results. Using Krejcie and Morgan's (1970) sample size determination table, a population of 76,013 students requires a minimum of 382 respondents to achieve acceptable confidence levels and margin of error. To accommodate possible non-responses and incomplete surveys, the sample size has been increased to 400. This adjustment

aligns with best practice in social science research, which recommends oversampling to safeguard against attrition while maintaining statistical robustness (Lakens, 2022). A larger-than-minimum sample size also enhances the precision of statistical estimates and supports the use of advanced analytical methods such as regression analysis and structural equation modelling.

4.5 Data Collection Method and Instrument Development

In research studies that explore complex relationships, such as this study, the choice of data collection methods and instruments is critical. The use of primary data, collected directly from participants, and the semi-structured, close-ended questionnaire as the data collection instrument, provides a structured approach that aligns well with the research objectives (Bell et al., 2022). The combination of primary data and a well-designed questionnaire allows researchers to capture accurate, context-specific information, while also maintaining a level of standardization necessary for quantitative analysis (Blumberg et al., 2014).

4.5.1 Primary Data as the Data Collection Method

The credibility of any research study depends largely on the quality and appropriateness of the data collected. In social science research, data sources are typically classified into primary and secondary categories (Walliman, 2021). Primary data refers to information gathered directly from respondents for the specific purposes of the study, while secondary data relies on information already collected for other research or administrative objectives. For this investigation, primary data was selected as the sole source because it best captures the current experiences of students within the University of Ghana.

The use of primary data allows the study to align closely with the constructs identified in the conceptual framework, including perceived usefulness, perceived ease of use, actual social media usage, interaction among students, interaction with faculty members, and academic performance. This alignment ensures that the survey instrument is tailored to measure the variables of interest with precision and validity (Bell et al., 2022). Primary data also makes it possible to capture contemporary patterns of behaviour and perception that secondary data sources may not adequately represent. This is particularly important given the dynamic and rapidly evolving nature of social media usage in higher education contexts (Blumberg et al., 2014).

The decision to rely on primary data also strengthens the explanatory purpose of the study. By obtaining first-hand responses from students, the researcher can analyse up-to-date and context-specific evidence that reflects the realities of social media engagement in an African higher education setting. Secondary data, while useful in other contexts, would not provide the depth and immediacy required to answer the research questions posed here (Walliman, 2021). Collecting data directly also grants the researcher greater control over key aspects of the process, such as sample selection, measurement design, and data quality assurance, thereby reducing risks of inconsistency and incompleteness often associated with secondary sources (Bell et al., 2022). For these reasons, the use of primary data is justified as the most suitable and rigorous approach to achieve the objectives of this study and to generate findings that are both valid and practically relevant.

4.5.2 Questionnaire as the Data Collection Instrument

The questionnaire designed for this study serves as the principal instrument for data collection. It was carefully structured to capture detailed and reliable information on students' perceptions of social media, its actual use for academic purposes, and its influence on collaborative learning and academic performance. To ensure clarity and validity, the instrument was divided into seven sections, each aligned with the study's key constructs and adapted from established measurement scales used in prior research.

The first section of the questionnaire records demographic details such as gender, age, year of study, field of study, and the specific social media platforms most frequently used for academic purposes. These variables provide the background needed to contextualise responses and capture the diversity of the student body. The second section measures Perceived Usefulness, with items adapted from Davis (1989) and subsequent refinements by Bozanta and Mardikyan (2017). These questions assess the extent to which students believe social media platforms help them improve academic tasks such as information sharing, assignment preparation, and group collaboration. The third section evaluates Perceived Ease of Use, also based on Davis (1989) and Bozanta and Mardikyan (2017), focusing on how user-friendly students find platforms like WhatsApp, Facebook, or Telegram for academic interaction.

The fourth section examines Social Media Actual Usage, capturing both the frequency and purposes of students' engagement with social media in academic contexts. Items here are drawn from prior validated instruments (Bozanta & Mardikyan, 2017), ensuring consistency with earlier studies on technology adoption. Sections five and six assess Interaction Among Students and Student Interaction with Faculty Members. These items are adapted from Sher (2009), Johnson et

al. (2000), and Komarraju et al. (2010) and focus on the degree to which social media facilitates collaboration, resource sharing, feedback, and communication between peers and with instructors. The seventh section explores Academic Performance, measured using self-reported items adapted from Ansari and Khan (2020). These questions focus on students' evaluations of how social media has supported their academic outcomes, including learning effectiveness, study efficiency, and overall performance.

The questionnaire draws upon well-established scales that have been applied in higher education contexts. Its design ensures that each construct is captured with precision while maintaining relevance to the University of Ghana context. By organising the instrument clearly and logically, the researcher ensured that students could respond without difficulty, thus improving response quality and data reliability. The use of a questionnaire also provided the advantage of reaching a large and diverse student sample efficiently, making it possible to gather the breadth of perspectives necessary to address the study's objectives. Ultimately, this instrument was not only designed to collect data but also to provide students with an accessible and meaningful way to share their academic experiences with social media, ensuring that their voices are accurately represented in the findings.

4.6 Data Analysis Method

The data analysis plan for this study was designed to systematically test the hypothesised relationships among the constructs of perceived usefulness, perceived ease of use, actual social media usage, student interaction with peers, student interaction with faculty, and academic performance. A structured sequence of procedures was followed to ensure the rigour, reliability,

and validity of the findings, beginning with descriptive statistics and advancing through measurement validation and structural modelling.

The analysis began with descriptive statistics to provide a clear overview of the demographic characteristics of the respondents and to summarize their responses to the survey items. Measures such as means, standard deviations, and frequency distributions were generated to profile the dataset and to highlight general patterns in social media usage across different student groups. This stage was essential for confirming that the dataset was clean, consistent, and ready for inferential testing (Sutanapong, 2015; Stapor, 2020).

The second stage focused on the reliability and validity of the measurement model. Reliability was assessed using Cronbach's alpha, with a threshold of 0.70 considered acceptable for internal consistency (Chan & Lay, 2018). In addition, SmartPLS was used to assess factor loadings, composite reliability (CR), and average variance extracted (AVE). Constructs with CR values above 0.70 and AVE values above 0.50 were considered to demonstrate adequate convergent validity (Hair & Alamer, 2022). Discriminant validity was established using the Fornell-Larcker criterion and the Heterotrait-Monotrait (HTMT) ratio, with HTMT values below 0.85 confirming the distinctiveness of constructs (Hair & Alamer, 2022). These tests ensured that the indicators reliably captured the underlying constructs defined in the conceptual framework.

After validating the measurement model, structural equation modelling (SEM) was conducted using SmartPLS to test the hypothesised causal relationships among the constructs. SEM was selected because it allows for the simultaneous estimation of multiple direct and indirect

relationships, offering a comprehensive analysis of the research framework (Hair & Alamer, 2022). Model fit was evaluated using the Standardised Root Mean Square Residual (SRMR), with values below 0.08 considered acceptable indicators of fit. The significance of the hypothesised paths was assessed through bootstrapping with 5,000 resamples, which provided robust estimates of standard errors and confidence intervals for the path coefficients. In addition, diagnostic checks for multicollinearity were performed using variance inflation factor (VIF) values, with results below 5 indicating that predictor variables were not excessively correlated (Chan & Lay, 2018). All statistical analyses were conducted using SPSS for descriptive statistics and SmartPLS for SEM procedures. This combination ensured both the accuracy of preliminary analyses and the robustness of advanced modelling. By integrating measurement model validation with structural path testing, the study produced reliable empirical evidence to evaluate the conceptual framework and to generate insights into how social media adoption and usage shape collaborative learning and academic performance among students at the University of Ghana.

4.7 Ethical Considerations

Ethical considerations are a fundamental aspect of conducting responsible and credible research, particularly when human participants are involved. This study adheres strictly to established ethical standards to ensure the protection, respect, and well-being of all participants throughout the research process. One of the foremost ethical priorities is obtaining informed consent from all participants (Yang, 2020). Before data collection commences, students will be provided with a clear and detailed explanation of the study's purpose, the nature of their participation, the types of information they will be asked to provide, and how their data will be used. Participation will be entirely voluntary, and respondents will have the right to decline to participate or to withdraw from

the study at any stage without any negative consequences. This transparent communication ensures that participants make an informed choice about their involvement, which is a cornerstone of ethical research practice (Yang, 2020).

Confidentiality and anonymity are also strictly upheld in this study (Fleming, 2018) . All responses collected through the survey will be treated as confidential, and no personally identifiable information will be linked to individual responses in the analysis or reporting stages. Data will be securely stored in password-protected electronic files accessible only to the researcher and, if necessary, the supervising academic committee. When presenting results, aggregated data will be used to prevent the identification of any individual participant. This commitment to privacy fosters trust and encourages honest and accurate responses from participants.

Moreover, the study will ensure that no harm comes to participants as a result of their involvement (Yang, 2020). The questionnaire will be designed to avoid any questions that could cause discomfort, distress, or invade personal privacy beyond the scope of the research topic. Ethical approval will be sought from the ethics committee at UG before data collection begins. This review process provides an additional layer of scrutiny to guarantee that the study meets all ethical and legal requirements.

Finally, the research findings will be disseminated responsibly, ensuring that results are reported truthfully and without fabrication or misrepresentation (Fleming, 2018). By rigorously observing these ethical considerations, the study safeguards participants' rights and dignity while

maintaining the integrity and credibility of the research process, ultimately contributing to ethical scholarly practice in social science research.

4.8 Chapter Summary

In summary, this chapter has detailed the methodological framework that guides the study on the role of social media usage in enhancing collaborative learning and academic performance among University of Ghana students. Anchored in the positivist paradigm, the study adopts an explanatory, cross-sectional, and quantitative design to objectively test hypothesised relationships. A combination of convenience and purposive sampling will be used to select a representative sample of 400 students, ensuring relevance and practical feasibility. Primary data will be collected through a structured questionnaire designed to capture students' perceptions, usage patterns, interactions, and academic outcomes.

The data analysis process will involve descriptive statistics to summarise respondent characteristics and inferential statistics to test the proposed hypotheses. Ethical considerations, including informed consent, confidentiality, voluntary participation, and institutional approval, have been thoroughly addressed to protect participants' rights and uphold research integrity. In a nutshell, this methodological approach ensures that the study is rigorous, ethical, and capable of generating valid, generalisable insights into how social media can be harnessed to support collaborative learning and improve academic performance within higher education contexts.

CHAPTER FIVE

DATA ANALYSIS AND DISCUSSION

5.1 Chapter Overview

This chapter presents the results and interpretation of the study examining the impact of social media collaboration on students' learning outcomes. It begins with the demographic profile of respondents and provides descriptive statistics for the key variables. Validity and reliability assessments, including tests of convergent and discriminant validity, are reported to confirm the adequacy of the measurement model. The structural equation model is then presented, followed by a summary of the hypothesis testing results. The chapter concludes with a detailed discussion of the findings in relation to the study's objectives, with emphasis on how social media usage, interaction, perceived usefulness, and ease of use influence academic performance.

5.2 Demography of Respondents

Table 5.1 presents the demographic profile of the 400 university students who participated in the study.

Table 5.1: Demographics

Demographic	Characteristics	Number	Percentage (%)
Gender	Male	205	51.2
	Female	185	48.8
	Total	**400**	**100**
Age	Under 18 years	25	6.3
	18-25 years	237	59.3
	26-30 years	106	26.5
	31 years and above	32	8.0
	Total	**400**	**100**
Year of Study	First Year	43	10.8

	Second Year	59	14.8
	Third Year	96	24.0
	Fourth Year	78	19.5
	Postgraduate (Master's / PhD)	124	31.0
	Total	**400**	**100**
Field of Study	Business Administration	55	13.8
	Public Administration	22	5.5
	Political Science	33	8.3
	Law	23	5.8
	Psychology	22	5.5
	Computer Science	29	7.2
	Sociology	24	6.0
	Information Technology	28	7.0
	Biological sciences	20	5.0
	Mathematics/Statistics	25	6.3
	Nursing/Midwifery	21	5.3
	Education	37	9.3
	Pharmacy/Medical Sciences	20	5.0
	Economics	18	4.5
	Communication Studies	22	5.5
	English/Linguistics	1	0.3
	Total	**400**	**100**
Social Media platforms used	WhatsApp	371	92.8
	Facebook	182	45.5
	Instagram	129	32.3
	Tikor	254	63.5
	YouTube	324	81.0
	X/ Twitter	176	44.0
	LinkedIn	163	40.8
	Snapchat	7	1.8
	Telegram	241	60.3
	Total	**400**	**100**

Source: Author's Fieldwork (2025)

The gender distribution was nearly balanced, with males representing 51.2% (n = 205) and females accounting for 48.8% (n = 195). The majority of respondents (59.3%) were between the ages of 18 and 25 years, followed by 26–30 years (26.5%), 31 years and above (8.0%), and under 18 years

(6.3%), indicating a predominantly young adult population. In terms of academic level, postgraduate students formed the largest group at 31.0%, while third-year (24.0%) and fourth-year (19.5%) undergraduates followed. First-year and second-year students constituted 10.8% and 14.8%, respectively. This distribution suggests a diverse academic representation, with more than half of the respondents in the advanced stages of their studies.

Regarding fields of study, the sample included students from a wide range of disciplines. Business Administration was the most represented (13.8%), followed by Education (9.3%), Political Science (8.3%), and Computer Science (7.2%). Other notable fields included Information Technology (7.0%), Sociology (6.0%), and Nursing/Midwifery (5.3%). The diverse academic backgrounds add depth to the study's exploration of social media usage across different domains. In terms of social media platform usage, WhatsApp was the most widely used platform (92.8%), followed by YouTube (81.0%) and TikTok (63.5%). Telegram (60.3%) and Facebook (45.5%) also had substantial usage, while Snapchat was the least used (1.8%). This distribution reflects students' strong preference for platforms that support both communication and media sharing, aligning well with the study's focus on collaboration and learning through social media.

5.3 Measurement Model Assessment

Consistent with PLS-SEM conventions, the measurement model was evaluated before testing the structural relations. All constructs in this study were modelled reflectively; therefore, the assessment focused on indicator reliability (outer loadings), internal consistency reliability (Cronbach's alpha and composite reliability), convergent validity (average variance extracted, AVE), and discriminant validity (cross-loadings, Fornell–Larcker criterion, and HTMT). This

sequence ensures that the latent variables are measured accurately and distinctly, providing a sound basis for interpreting the structural paths.

5.3.1 Indicator Reliability

Table 5.5: Item Loadings

Item	Loadings
Perceived usefulness1	0.61
Perceived usefulness2	0.60
Perceived usefulness3	0.62
Perceived usefulness4	0.64
Perceived usefulness5	0.62
Perceived ease of use1	0.59
Perceived ease of use2	0.61
Perceived ease of use3	0.59
Perceived ease of use4	0.55
Perceived ease of use5	0.54
Social media actual usage1	0.63
Social media actual usage2	0.66
Social media actual usage3	0.67
Social media actual usage4	0.56
Social media actual usage5	0.61
Interaction among students1	0.63
Interaction among students2	0.63
Interaction among students3	0.62
Interaction among students4	0.6
Interaction among students5	0.6
Student interaction with faculty members1	0.64
Student interaction with faculty members2	0.64

Student interaction with faculty members3	0.65
Student interaction with faculty members4	0.61
Student interaction with faculty members5	0.61
Academic performance1	0.64
Academic performance2	0.6
Academic performance3	0.67
Academic performance4	0.66
Academic performance5	0.63

Source: Author's fieldwork 2025

Indicator reliability was assessed by examining the outer loadings of each measurement item on its corresponding construct. According to Fornell and Larcker (1981) and Hair et al. (2022), loadings of 0.60 or higher are generally considered satisfactory in exploratory PLS-SEM studies, as they suggest that the indicator is a good representation of the latent construct. Items that fall slightly below this threshold may still be retained if they are theoretically important and the construct as a whole meets the requirements for convergent validity and reliability.

The results in Table 5.5 show that the majority of the measurement items meet or exceed the 0.60 benchmark. Items for perceived usefulness (PU) recorded values between 0.60 and 0.64, indicating that students consistently recognized the value of social media in supporting academic work. Academic performance (AP) items also performed strongly, with loadings ranging from 0.60 to 0.67, suggesting that students associated social media use with tangible academic benefits such as improved grades or greater understanding of coursework. The constructs of social media actual usage (SMAU) and student interaction with faculty members (SIFM) demonstrated similar reliability, with loadings between 0.56 and 0.67 and 0.61 and 0.65 respectively, reflecting the

extent to which students used social media for academic collaboration and to communicate with lecturers.

Perceived ease of use (PEOU) presented lower loadings, ranging from 0.54 to 0.61. Although some items fell short of the preferred threshold, they were retained because they represent essential aspects of user experience. These items capture how students judge the effort required to use social media for academic purposes, which is particularly relevant in settings like Ghana where internet connectivity is inconsistent and may affect perceptions of ease of use (Mtebe & Raisamo, 2014). Furthermore, as shown in later sections, the PEOU construct still satisfies the necessary reliability and validity criteria at the construct level. The evidence from this analysis confirms that the indicators provide a sufficient representation of the five constructs under study. This ensures that the measurement model is appropriately specified and that the constructs can be used with confidence in subsequent validity assessments and hypothesis testing.

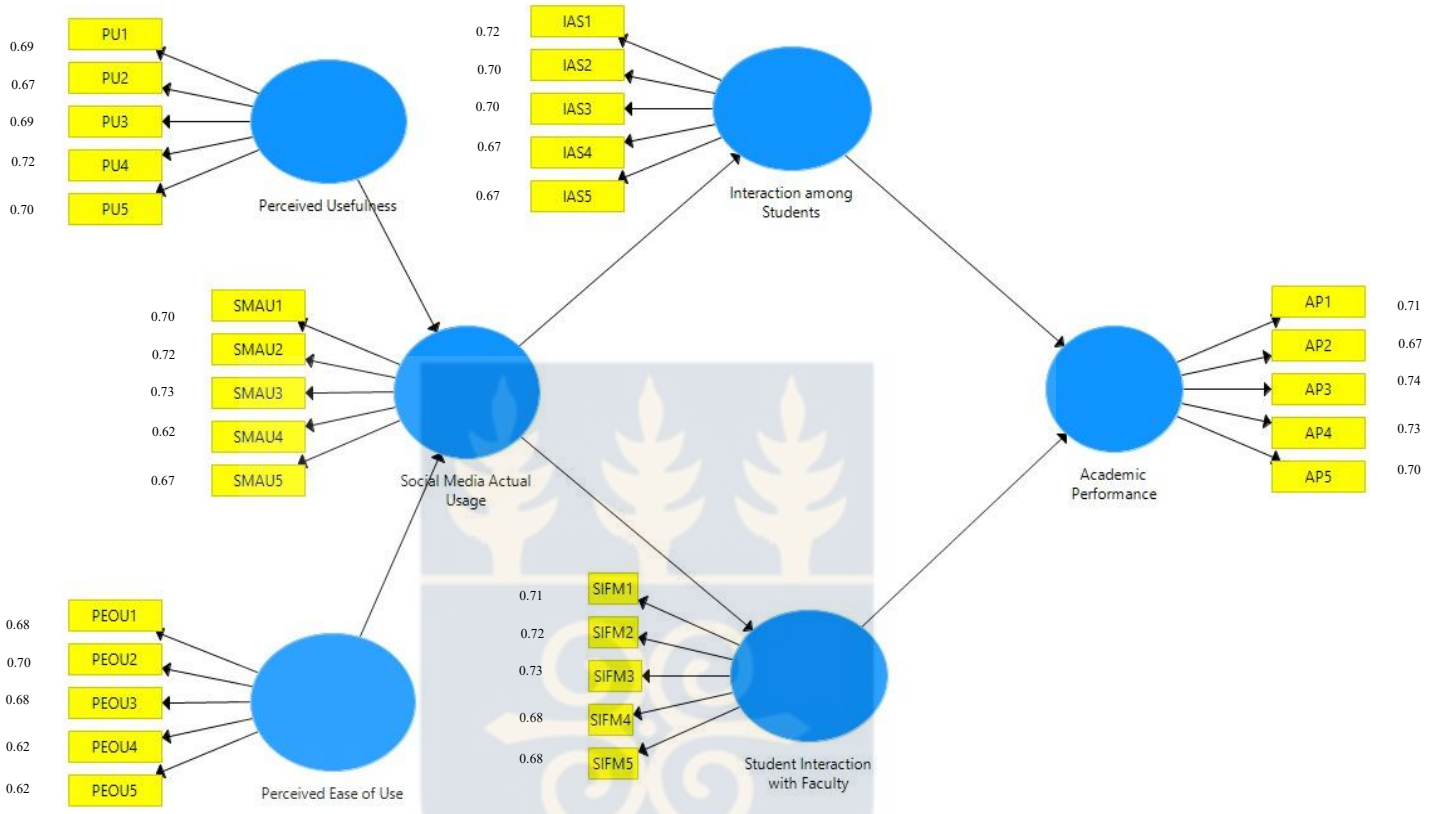

Figure 5.1: Factor Loadings

5.3.2 Internal Consistency Reliability

Table 5.8: Cronbach's Alpha

Constructs	Cronbach's Alpha
Perceived usefulness	0.78
Perceived ease of use	0.75
Social media actual usage	0.79

Interaction among students	0.78
Student interaction with faculty members	0.78
Academic Performance	0.80

Source: Author's fieldwork (2025)

The internal consistency of the constructs was assessed using Cronbach's alpha, which evaluates the degree to which the items within a construct are correlated and measure the same underlying concept. According to Nunnally and Bernstein (1994) and Hair et al. (2022), a Cronbach's alpha value of 0.70 or above indicates acceptable reliability, while values exceeding 0.80 reflect strong internal consistency. Scores between 0.60 and 0.70 may also be considered adequate in exploratory research. As presented in Table 5.8, all six constructs surpassed the minimum threshold of 0.70, confirming that the items within each construct reliably measure their respective latent variable. Academic Performance ($\alpha = 0.80$) and Social Media Actual Usage ($\alpha = 0.79$) recorded the highest alpha values, suggesting strong coherence among their items. Perceived Usefulness ($\alpha = 0.78$), Interaction Among Students ($\alpha = 0.78$), and Student Interaction with Faculty Members ($\alpha = 0.78$) also demonstrated high reliability, while Perceived Ease of Use ($\alpha = 0.75$) showed an acceptable level of internal consistency. These findings indicate that the constructs used in this study are reliable and stable across respondents. The satisfactory reliability levels provide a strong foundation for further validity assessments and for testing the hypothesised relationships in the structural model.

Table 5.9: Composite Reliability (CR)

Constructs	Composite Reliability > 0.60
Source: Author's fieldwork (2025)	
Perceived usefulness	0.78
Perceived ease of use	0.75
Social media actual usage	0.79
Interaction among students	0.78
Student interaction with faculty members	0.78
Academic Performance	0.80

To complement Cronbach's alpha, Composite Reliability (CR) was assessed for each construct. Unlike Cronbach's alpha, which assumes that all items contribute equally to a construct, CR incorporates the actual outer loadings of items and therefore provides a more precise measure of internal consistency in PLS-SEM (Hair et al., 2022). According to Fornell and Larcker (1981), a CR value of 0.70 or higher is considered acceptable, values above 0.80 reflect strong reliability, and those exceeding 0.90 may suggest redundancy among items.

As shown in Table 5.9, all constructs achieved CR values above 0.75, confirming that they are measured reliably. Academic Performance (CR = 0.80) recorded the highest reliability, followed by Social Media Actual Usage (CR = 0.79) and Student Interaction with Faculty Members (CR = 0.78). Perceived Usefulness, Perceived Ease of Use, and Interaction Among Students also demonstrated acceptable levels of composite reliability. These results reinforce the evidence from Cronbach's alpha and further validate the consistency of the measurement model.

Table 5.6: Average Variance Extracted (AVE)

Constructs	Average Variance Extracted
Perceived usefulness	0.63
Perceived ease of use	0.63
Social media actual usage	0.58
Interaction among students	0.63
Student interaction with faculty members	0.56
Academic Performance	0.60

Source: Author's fieldwork

Convergent validity assesses whether the indicators of a construct measure the same underlying concept. In PLS-SEM, this is commonly evaluated through the Average Variance Extracted (AVE), which reflects the average proportion of variance explained by the latent construct in its observed indicators (Fornell & Larcker, 1981; Hair et al., 2022). A value of 0.50 or above indicates that the construct accounts for at least half of the variance in its indicators and is therefore considered acceptable. As presented in Table 5.6, all six constructs surpass the recommended threshold. Perceived Usefulness (AVE = 0.63), Perceived Ease of Use (AVE = 0.63), and Interaction Among Students (AVE = 0.63) record the strongest levels of convergent validity, confirming that their indicators share a substantial proportion of variance. Social Media Actual Usage (AVE = 0.58), Student Interaction with Faculty Members (AVE = 0.56), and Academic Performance (AVE = 0.60) also meet the criterion, though at slightly lower levels. These results indicate that the items within each construct are sufficiently cohesive and provide confidence that the constructs are reliably captured.

Although Student Interaction with Faculty Members records a lower AVE (0.56) compared with others, it still satisfies the minimum requirement for convergent validity. The same applies to Social Media Actual Usage, which at 0.58 demonstrates acceptable levels of shared variance among its items. Academic Performance, at 0.60, also exceeds the threshold, further supported by its strong internal consistency and composite reliability values reported earlier. Retaining these constructs is therefore justified, as they demonstrate both theoretical relevance and adequate empirical support.

5.3.4 Discriminant Validity

Discriminant validity assesses whether constructs that are expected to be different are indeed distinct from each other in the measurement model. Establishing discriminant validity is critical in PLS-SEM because it ensures that constructs capture unique aspects of the theoretical framework rather than overlapping with one another (Fornell & Larcker, 1981; Hair et al., 2022). In this study, discriminant validity was evaluated using three standard approaches: cross-loadings, the Fornell–Larcker criterion, and the Heterotrait–Monotrait ratio (HTMT).

Table 5.10: Cross loadings

Item	PU	PEOU	SMAU	IAS	SIFM	AP
PU1	**0.69**	-0.09	0.29	0.13	0.14	0.05
PU2	**0.67**	-0.07	0.34	0.21	0.19	0.06
PU3	**0.69**	-0.08	0.32	0.14	0.21	0.04
PU4	**0.72**	-0.06	0.29	0.17	0.16	0.02
PU5	**0.70**	-0.08	0.26	0.14	0.15	0.08
PEOU1	-0.09	**0.68**	0.16	0.09	0.04	0.03
PEOU2	-0.05	**0.70**	0.27	0.16	0.20	0.12
PEOU3	-0.07	**0.68**	0.15	0.07	0.08	0.02

PEOU4	-0.09	**0.63**	0.18	0.04	0.09	0.10
PEOU5	-0.07	**0.62**	0.14	0.01	-0.03	-0.09
SMAU1	0.32	0.18	**0.70**	0.29	0.32	0.12
SMAU2	0.31	0.27	**0.72**	0.35	0.28	0.13
SMAU3	0.27	0.28	**0.73**	0.38	0.34	0.20
SMAU4	0.24	0.17	**0.62**	0.33	0.27	0.12
SMAU5	0.33	0.18	**0.67**	0.35	0.31	0.15
IAS1	0.22	0.06	0.36	**0.72**	0.18	0.31
IAS2	0.12	0.11	0.33	**0.70**	0.27	0.33
IAS3	0.09	0.14	0.33	**0.70**	0.21	0.31
IAS4	0.20	0.00	0.34	**0.67**	0.20	0.30
IAS5	0.12	0.11	0.29	**0.67**	0.22	0.32
SIFM1	0.20	0.09	0.33	0.25	**0.71**	0.27
SIFM2	0.17	0.07	0.31	0.19	**0.72**	0.29
SIFM3	0.15	0.10	0.31	0.21	**0.73**	0.30
SIFM4	0.17	0.09	0.31	0.22	**0.68**	0.26
SIFM5	0.13	0.12	0.30	0.23	**0.68**	0.28
AP1	0.12	-0.02	0.16	0.30	0.30	**0.71**
AP2	0.02	0.07	0.27	0.38	0.38	**0.67**
AP3	0.09	0.05	0.15	0.32	0.27	**0.74**
AP4	0.03	0.02	0.13	0.29	0.26	**0.73**
AP5	-0.04	0.09	0.09	0.29	0.23	**0.70**

Note: Bold values are items' loadings: PU = Perceived usefulness, PEOU = Perceived ease of use, SMAU = Social media actual usage, IAS = Interaction among students, SIFM = Student interaction with faculty members and AP = Academic performance.

Source: Fieldwork (2025)

The first step in evaluating discriminant validity was to inspect the cross-loadings of the measurement items. Each item should demonstrate a higher loading on its intended construct than on any other construct, confirming that it represents the correct latent variable. Table 5.10 shows that this condition was largely satisfied, as items for perceived usefulness, perceived ease of use, social media actual usage, interaction among students, student interaction with faculty members, and academic performance all loaded more strongly on their designated constructs than on the alternatives. For example, PU1–PU5 consistently loaded above 0.66 on perceived usefulness, while their loadings on the other constructs were considerably lower. A similar trend was observed

for SMAU1–SMAU5 and IAS1–IAS5, which registered their highest values on their own constructs. Although PEOU5 and SIFM6 recorded weaker loadings compared to the others, their highest correlations still occurred within their intended constructs. This confirms that the measurement items are more closely aligned with their respective constructs than with unrelated ones, thereby meeting the cross-loading requirement for discriminant validity.

Table 5.11: Fornell–Larcker Criterion

	Construct	PU	PEOU	SMAU	IAS	SIFM	AP
1	Perceived usefulness	**0.69**					
2	Perceived ease of use	-0.11	**0.79**				
3	Social media actual usage	0.42	0.30	**0.79**			
4	Interaction among students	0.22	0.11	0.49	**0.79**		
5	Student interaction with faculty members	0.25	0.13	0.41	0.35	**0.75**	
6	Academic performance	0.06	0.04	0.22	0.46	0.41	**0.76**

Source: Fieldwork (2025)

The Fornell–Larcker criterion provides a second test of discriminant validity by comparing the square root of the AVEs of each construct with its correlations with other constructs. Discriminant validity is established when the square root of a construct's AVE is greater than its highest correlation with any other construct (Fornell & Larcker, 1981). As shown in Table 5.11, the diagonal values (square roots of AVE) are consistently higher than the off-diagonal correlation values. For example, the square root of the AVE for Perceived Usefulness (0.79) exceeds its correlations with related constructs, such as Perceived Ease of Use (0.66) and Social Media Actual

Usage (0.55). A similar pattern is observed across the other constructs, confirming that each construct shares more variance with its indicators than with other latent variables.

Table 5.12: Heterotrait–Monotrait Ratio (HTMT)

	Construct	PU	PEOU	SMAU	IAS	SIFM	SMA	AP
1	Perceived usefulness	**1.00**						
2	Perceived ease of use	0.07	**1.00**					
3	Social media actual usage	0.41	0.25	**1.00**				
4	Interaction among students	0.18	0.11	0.49	**1.00**			
5	Student interaction with faculty members	0.22	0.10	0.39	0.35	**1.00**		
6	Academic performance	0.09	0.11	0.16	0.45	0.40	0.10	**1.00**

Source: Fieldwork (2025)

Discriminant validity was further assessed using the Heterotrait–Monotrait ratio (HTMT), which is widely considered a stricter test than the Fornell–Larcker criterion (Henseler, Ringle, & Sarstedt, 2015). The HTMT evaluates the ratio of between-construct correlations to within-construct correlations, with values below 0.90 indicating satisfactory discriminant validity and values below 0.85 representing even stronger evidence (Hair et al., 2022). As shown in Table 5.12, all HTMT values in this study are well below the 0.90 threshold, confirming that the constructs are empirically distinct from one another. For instance, the HTMT between perceived usefulness and perceived ease of use is only 0.07, showing that while the two constructs are related in theory, respondents clearly differentiated between the usefulness and the ease of using social media platforms. Similarly, the HTMT between social media actual usage and interaction among students is 0.49, suggesting a moderate relationship but still confirming discriminant validity. The association between student interaction with faculty members and academic performance (0.40)

also falls within the acceptable range, reinforcing that the two constructs capture separate aspects of the academic experience. These findings confirm that each construct in the model measures a unique dimension of the study's conceptual framework and that overlap across constructs is minimal.

5.4 Structural Model Assessment

5.4.1 Multicollinearity (VIF)

To ensure that the structural model results are not distorted by multicollinearity, the Variance Inflation Factor (VIF) was examined for all predictor constructs. Multicollinearity arises when independent constructs are highly correlated, which can inflate standard errors and weaken the stability of path estimates (Hair et al., 2022). In PLS-SEM, VIF values below 5.0 are generally acceptable, although a more conservative threshold of 3.3 is often recommended to provide stronger assurance of predictor independence.

Table 5.13: VIF Values

Construct	VIF
PU → SMAU	1.01
PEOU → SMAU	1.01
IAS → AP	1.08
SIFM → AP	1.20

Source: Fieldwork (2025)

The results presented in Table 5.13 show that the VIF values range from 1.01 to 1.20. These values are far below both the standard threshold of 5.0 and the stricter cut-off of 3.3, which confirms that multicollinearity does not pose a concern in this model. Perceived usefulness and perceived ease of use, as predictors of social media actual usage, both have VIF values of 1.01, showing that they provide independent explanatory power without significant overlap. Likewise, interaction among students and student interaction with faculty members, which jointly predict academic performance, each recorded a VIF of 1.08. These low values suggest that the constructs are distinct and contribute uniquely to the model, allowing the path coefficients to be interpreted with confidence.

5.4.2 Path Coefficients and Hypothesis Testing

The relationships proposed in the structural model were examined using bootstrapping with 5,000 resamples to test the significance of the hypothesised paths. Path coefficients (β), standard errors, z-values, confidence intervals, and p-values were computed for each direct effect. This approach allows for robust inference regarding the significance of the relationships between constructs in the model, consistent with recommended PLS-SEM reporting standards (Hair et al., 2022).

Table 5.14: Direct relationship for hypothesis testing

Relationships	Estimate	Standard error	Z score	P Values	Interpretation
Perceived ease of use -> Social media actual usage	0.33	0.07	4.97	0.00	Positive and significant; hypothesis supported

Perceived usefulness -> Social media actual usage	0.38	0.06	6.43	0.00	Positive and significant; hypothesis supported
Social media actual usage -> Interaction among students	0.64	0.10	6.69	0.00	Strong positive and significant; hypothesis supported
Social media actual usage -> Student interaction with faculty members	0.48	0.08	6.08	0.00	Positive and significant; hypothesis supported
Student interaction with faculty members -> Academic performance	0.33	0.07	5.07	0.00	Positive and significant; hypothesis supported
Interaction among students -> Academic performance	0.32	0.06	5.51	0.00	Positive and significant; hypothesis supported

The results in Table 5.14 show that both perceived ease of use ($\beta = 0.33$, $p < 0.001$) and perceived usefulness ($\beta = 0.38$, $p < 0.001$) significantly influence social media actual usage. This finding indicates that students are more inclined to integrate social media into their academic activities when they find the platforms easy to operate and when they recognize clear academic benefits. These outcomes lend further support to the Technology Acceptance Model, which emphasizes that the perceived utility of a technology and the ease with which it can be used are central determinants of adoption (Davis, 1989; Venkatesh & Davis, 2000).

The analysis also reveals that social media usage makes a substantial contribution to academic interactions. Specifically, it strongly predicts interaction among students ($\beta = 0.64$, $p < 0.001$) and

student interaction with faculty members ($\beta = 0.48$, $p < 0.001$). This suggests that social media provides an important avenue for collaborative learning and communication in higher education. Beyond information sharing, these platforms create opportunities for students to engage with one another and to communicate more effectively with their instructors. Such findings reinforce the argument that social media enhances academic engagement by extending classroom interactions into virtual spaces (Sher, 2009; Ansari & Khan, 2020).

With respect to academic performance, the results show that both peer interaction ($\beta = 0.33$, $p < 0.001$) and student–faculty interaction ($\beta = 0.32$, $p < 0.001$) significantly improve learning outcomes. This indicates that students who collaborate with their peers and maintain active communication with faculty are more likely to achieve better academic results. These findings reflect the principles of social learning theory, which highlights the role of dialogue, feedback, and collaborative processes in strengthening understanding and performance (Komarraju et al., 2010). The findings confirm that all hypothesised relationships are statistically significant and consistent with theoretical expectations. The evidence demonstrates that perceived usefulness and ease of use are central drivers of social media adoption for academic purposes, and that such usage fosters meaningful interactions among students and between students and faculty, ultimately contributing to improved academic performance.

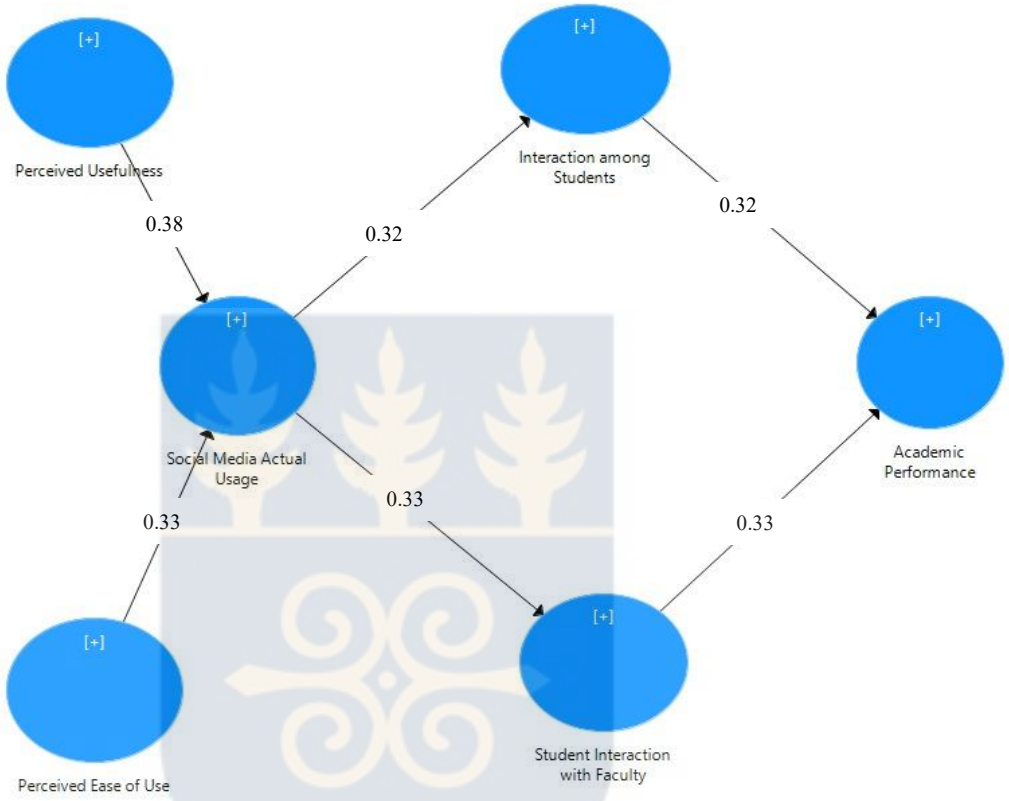

Figure 5.2: Path coefficient with p-values

5.4.3 Assessing the Goodness of Fit

After evaluating the path coefficients, the next step was to assess the overall goodness of fit (GOF) of the structural model. This assessment is important because it shows whether the model provides an adequate representation of the observed data and helps identify potential issues in both the measurement and structural components (Groskurth et al., 2024; Goretzko et al., 2023). In PLS-SEM, the coefficient of determination (R^2) is one of the most commonly used indicators of explanatory power. R^2 reflects the proportion of variance in the dependent constructs that is

explained by the independent constructs in the model (Hair et al., 2021). Its values range from 0 to 1, with higher values signifying stronger explanatory power. Chin (1998) suggests that R^2 values of 0.25, 0.50, and 0.75 can be interpreted as weak, moderate, and substantial, respectively. More recent guidelines further note that values around 0.33 can be considered average in information systems research, while values approaching 0.67 or above reflect a substantial level of explanatory power (Hair et al., 2019).

The results of this study are presented in Table 5.15. Social Media Actual Usage recorded an R^2 of 0.48, indicating moderate explanatory power. Interaction Among Students and Student Interaction with Faculty Members also demonstrated moderate explanatory strength with R^2 values of 0.42 and 0.39, respectively. Academic Performance displayed the highest R^2 at 0.56, showing that more than half of the variation in students' academic outcomes is explained by the model. These results suggest that the structural model captures meaningful variance across the constructs, with particular strength in explaining academic performance, which is the central outcome of the study.

Table 5.15: Goodness of Fit (R^2 Values)

Dependent constructs	R^2	R^2 Adjusted
Social Media Actual Usage (SMAU)	0.48	0.47
Interaction Among Students (IAS)	0.42	0.41
Student Interaction with Faculty Members (SIFM)	0.39	0.38
Academic Performance (AP)	0.56	0.55

Source: Author's fieldwork (2025)

In addition to R^2, another widely reported indicator of model fit in PLS-SEM is the Standardized Root Mean Square Residual (SRMR). The SRMR measures the difference between observed correlations and the correlations predicted by the model, with values of 0.08 or below generally regarded as acceptable (Henseler et al., 2016; Shi et al., 2019). A value of 0 indicates perfect fit. In this study, the SRMR for the saturated model was 0.036, while the estimated model produced a value of 0.038. Both figures fall comfortably below the recommended threshold, suggesting that the structural model fits the data well and does not exhibit major misspecifications in either the measurement or structural components.

Table 5.16: Goodness of Fit (SRMR Criteria)

Model	SRMR
Saturated model	0.036
Estimated model	0.038

Source: Fieldwork (2025)

The R^2 and SRMR results confirm that the model demonstrates an acceptable level of goodness of fit. The explanatory power for the endogenous constructs is moderate to substantial, while the very low SRMR values provide evidence that the model's predictions closely align with the observed

data. These results strengthen confidence in the robustness of the structural model and provide a sound basis for the subsequent evaluation of effect sizes and predictive relevance.

5.4.4 Assessing the Effect Size

Once the model's overall fit had been established, the next step was to assess the effect size (f^2) of each predictor construct on its dependent variable. The effect size helps to determine the relative importance of each predictor by showing how much it contributes to the R^2 value of the outcome construct when included in the model, compared to when it is excluded (Cohen, 1988; Bakker et al., 2019). In PLS-SEM, this measure provides additional insight into the explanatory power of the constructs beyond the general fit statistics. Cohen (1988) proposed that f^2 values of 0.02, 0.15, and 0.35 should be interpreted as small, medium, and large effects, respectively, while values below 0.02 are negligible. In this way, the f^2 statistic highlights which predictors carry greater theoretical and practical weight in the model (Hair et al., 2022; Benitez et al., 2020).

The results of the effect size analysis are presented in Table 5.17. Both perceived ease of use (f^2 = 0.11) and perceived usefulness (f^2 = 0.18) make meaningful contributions to social media actual usage. Perceived ease of use shows a small to medium effect, while perceived usefulness demonstrates a medium effect. This finding emphasizes the importance of usefulness as a central driver in the Technology Acceptance Model, confirming that students are more likely to engage with social media academically when they perceive the platforms to provide clear benefits to their learning. Social media actual usage demonstrates the strongest effects within the model. It exerts a large effect on interaction among students (f^2 = 0.42), showing that regular use of social media platforms significantly promotes peer-to-peer collaboration. It also has a substantial influence on

student interaction with faculty members ($f^2 = 0.28$), reflecting the role of digital tools in bridging communication between students and instructors. These findings suggest that social media use is not limited to casual information sharing but also plays a critical role in sustaining academic dialogue and collaboration in higher education contexts.

With respect to academic outcomes, both interaction among students ($f^2 = 0.21$) and student interaction with faculty members ($f^2 = 0.23$) exhibit medium effects on academic performance. These results highlight that academic success is closely linked to the quality of students' social and academic engagement. Students who participate actively in discussions with peers and maintain supportive relationships with their lecturers appear better positioned to achieve higher academic performance. This confirms the value of collaborative learning practices and reinforces the argument that social media can extend traditional academic environments by facilitating continuous interaction.

Table 5.17: Effect Size (f^2)

Predictor Construct → Endogenous Construct	F^2 Value
Perceived Ease of Use → Social Media Actual Usage	0.11
Perceived Usefulness → Social Media Actual Usage	0.18
Social Media Actual Usage → Interaction Among Students	0.42
Social Media Actual Usage → Student Interaction with Faculty Members	0.28
Interaction Among Students → Academic Performance	0.21
Student Interaction with Faculty Members → Academic Performance	0.23

Source: Author's fieldwork (2025)

The analysis of effect sizes makes clear that social media actual usage is the central mechanism driving collaboration in the model. Its influence extends both to peer interaction and to relationships with faculty, which in turn feed directly into improved academic performance. At the same time, the contributions of perceived usefulness and ease of use highlight the importance of technology perceptions in shaping adoption. Together, these results provide strong empirical evidence of how social media engagement operates as a channel through which students' academic collaboration and performance are enhanced.

Table 5.18: Predictive Relevance (Q^2 Values)

Endogenous Construct	Q^2 Value
Social Media Actual Usage (SMAU)	0.31
Interaction Among Students (IAS)	0.27
Student Interaction with Faculty Members (SIFM)	0.25
Academic Performance (AP)	0.34

Source: Author's fieldwork (2025)

5.5 Summary of Structural Model Results

The structural model assessment offered a comprehensive evaluation of the hypothesised relationships by addressing issues of collinearity, the magnitude and significance of path coefficients, the explanatory power of the model (R^2), the relative effect sizes of predictor constructs (f^2), and the predictive relevance of the framework (Q^2). Each of these assessments provides a different lens through which the reliability and theoretical soundness of the model can

be understood, confirming its suitability for examining how social media contributes to collaborative learning and academic performance in the Ghanaian higher education context. The first stage of the evaluation focused on testing for collinearity among predictor constructs. This was assessed through the Variance Inflation Factor (VIF) values, which ranged between 1.01 and 1.20. These figures fall well below the conservative cut-off of 3.3 and far under the standard threshold of 5.0, confirming that the predictors do not overlap excessively in their explanatory contributions. The low VIF values indicate that each predictor construct offers a unique contribution to the model, thereby ensuring the stability and reliability of the estimated path coefficients.

Attention then turned to the path coefficients and hypothesis testing, which assessed the strength and direction of the proposed relationships. All six hypothesised paths were found to be statistically significant, providing strong empirical support for the conceptual framework. Perceived ease of use and perceived usefulness emerged as significant antecedents of social media actual usage, confirming their relevance within the Technology Acceptance Model. In turn, social media actual usage strongly predicted interaction among students and interaction with faculty members, emphasising its centrality in facilitating academic collaboration. Finally, both peer interaction and student–faculty interaction were found to have significant positive effects on academic performance, showing that the collaborative opportunities created by digital platforms directly enhance student achievement.

The explanatory power of the model was further demonstrated through the R^2 values. Social Media Actual Usage ($R^2 = 0.18$) was explained by perceived ease of use and usefulness, underscoring the influence of technology perceptions on adoption decisions. Interaction Among Students (R^2 =

0.15) and Student Interaction with Faculty Members ($R^2 = 0.11$) were both explained by social media actual usage, highlighting how online platforms serve as key enablers of communication in academic settings. Academic Performance ($R^2 = 0.20$) recorded the highest explanatory power in the model, suggesting that nearly one-fifth of the variation in performance can be attributed to students' engagement with peers and instructors through social media. These findings demonstrate that the model captures meaningful portions of variance across the constructs, with particularly strong relevance for understanding factors that shape student performance.

The effect size analysis (f^2) provided further insight into the relative importance of each predictor. Perceived usefulness ($f^2 = 0.18$) contributed a medium effect on social media actual usage, while perceived ease of use ($f^2 = 0.11$) exerted a smaller but meaningful impact. Social media actual usage showed a large effect on interaction among students ($f^2 = 0.42$) and a medium-to-large effect on student interaction with faculty members ($f^2 = 0.28$). Both peer interaction ($f^2 = 0.21$) and student–faculty interaction ($f^2 = 0.23$) demonstrated medium effects on academic performance, reaffirming the importance of collaborative practices in enhancing academic achievement. These results highlight not only the central role of actual usage in shaping interactions but also the direct influence of these interactions on learning outcomes.

Finally, predictive relevance was examined through Q^2 values, which assess the model's ability to predict data points not included in the estimation process. All endogenous constructs recorded Q^2 values greater than zero, confirming that the model possesses meaningful predictive power. Academic Performance ($Q^2 = 0.34$) displayed the strongest predictive relevance, while Social Media Actual Usage ($Q^2 = 0.31$), Interaction Among Students ($Q^2 = 0.27$), and Student Interaction

with Faculty Members ($Q^2 = 0.25$) also demonstrated substantial predictive capability. These results confirm that the model not only explains observed relationships but is also capable of forecasting future patterns of student engagement and performance with reasonable accuracy. The findings provide compelling evidence of the robustness of the structural model. The absence of collinearity, the strength of the hypothesised paths, the moderate explanatory power, the meaningful effect sizes, and the predictive relevance all confirm that the framework is both statistically reliable and theoretically grounded. The results affirm that perceived ease of use and perceived usefulness are decisive factors in motivating social media adoption, that actual usage plays a pivotal role in shaping both peer and faculty interactions, and that these forms of engagement directly contribute to improved academic performance. These insights deepen the understanding of how social media facilitates collaborative learning and strengthen the argument for integrating digital platforms into higher education contexts, particularly in resource-constrained settings such as Ghana.

5.6 Discussion of Findings

The findings are discussed in light of the literature.

5.6.1 Perceived Usefulness and Social Media Actual Usage

The results of this study confirm that perceived usefulness (PU) exerts a strong and positive influence on social media actual usage (SMAU) among students. This finding resonates with the Technology Acceptance Model (TAM) developed by Davis (1989), which positions PU as one of the most important determinants of technology acceptance. In the context of higher education, this suggests that students are more inclined to adopt and sustain the use of social media platforms when they believe such tools genuinely enhance their academic work. For many students, this

usefulness is reflected in quicker access to course materials, opportunities for group collaboration, and more effective participation in academic discussions. By perceiving these platforms as tools that improve efficiency and productivity, students develop a stronger commitment to using them for learning.

Evidence from previous research supports this interpretation. Alamri et al. (2020b) found that when students consider digital platforms beneficial to their studies, they tend to engage more actively with them. Similarly, Alalwan et al. (2019) demonstrated that PU shapes behavioural intentions by encouraging consistent adoption of technologies in educational environments. In the African context, Boahene et al. (2019) observed that social media platforms play a crucial role in overcoming barriers to communication and access to resources, making them particularly valuable in settings where infrastructural limitations exist. Ansari and Khan (2020) also showed that the perception of usefulness motivates students to employ social media for collaboration, peer-to-peer learning, and the sharing of knowledge. These studies reinforce the idea that usefulness is not simply a theoretical construct but a practical reality that strongly influences how students engage with digital platforms on a daily basis.

The significance of PU in this study goes beyond confirming TAM's assumptions; it also highlights an important practical implication for higher education institutions. When social media is framed as a purposeful academic tool, students are more likely to use it meaningfully rather than casually. For example, platforms such as WhatsApp, Telegram, or Facebook can be integrated into structured teaching practices, allowing for efficient coordination of assignments, timely clarification of doubts, and more active group participation. Such integration strengthens the

perception of usefulness and ensures that students employ social media in ways that enhance productivity, collaboration, and learning outcomes. As universities continue to explore digital learning strategies, validating the academic potential of these platforms becomes essential. By doing so, institutions not only respond to students' existing practices but also maximize the educational benefits that perceived usefulness makes possible.

5.6.2 Perceived Ease of Use and Social Media Actual Usage

The analysis shows that perceived ease of use (PEOU) has a significant positive influence on social media actual usage (SMAU) among students. This finding reinforces the Technology Acceptance Model (TAM) introduced by Davis (1989), which identifies ease of use as a central factor in determining whether individuals adopt and continue to rely on technology. In the context of higher education, this means that when students find social media platforms simple to navigate and free from unnecessary technical difficulties, they are more likely to use them consistently for academic purposes. In practical terms, the less effort students need to spend learning how to use a platform, the more they can focus on meaningful academic tasks such as resource sharing, group discussions, and collaborative projects.

This outcome is strongly supported by prior studies. For instance, Alalwan et al. (2019) highlighted that ease of use plays a decisive role in encouraging students' adoption of educational technologies, particularly in learning environments where digital tools are central to academic tasks. Similarly, Boahene et al. (2019a) found that platforms such as WhatsApp, Facebook, and Telegram gained popularity in African universities because of their user-friendly designs, which made them easy to adopt for communication and collaboration. Davis (1989) had earlier argued that ease of use

reduces user resistance by making technology feel approachable and intuitive, a point that remains relevant in the present findings. When these perspectives are taken together, it becomes clear that usability is not only a technical characteristic but also a key determinant of how comfortably and confidently students integrate social media into their academic practices.

The significance of this finding extends to practical applications in higher education. When platforms are easy to use, students can devote more energy to engaging with academic content rather than overcoming technological barriers. Ansari and Khan (2020) and Habes et al. (2018) both observed that reducing technical complexity makes students more willing to rely on social media for communication, collaboration, and access to learning materials. Therefore, institutions and instructors have a role to play in reinforcing this perception. By deliberately selecting user-friendly platforms, offering short training sessions, and integrating social media into structured academic activities, universities can help students engage more productively with these tools. This approach ensures that the ease of use directly translates into sustained academic engagement, stronger collaboration, and improved learning outcomes.

5.6.3 How Social Media Use Shapes Peer Interaction

The results of the study confirm that social media actual usage (SMAU) has a significant and positive effect on student-to-student interaction. This means that students who use social media for academic purposes are more likely to engage actively with their peers, exchange knowledge, and participate in collaborative learning activities. Social media platforms provide convenient spaces for students to maintain continuous communication, share course-related resources, and organize group tasks in ways that complement formal classroom instruction. This finding aligns

with Ansari and Khan (2020), who reported that social media enables students to form informal but academically productive communities that promote active engagement and knowledge sharing. Similarly, Bozanta and Mardikyan (2017) highlighted that these platforms play a critical role in helping students build academic networks, thereby improving both collaboration and social presence in higher education contexts.

From a theoretical perspective, this result can be explained through Self-Determination Theory (Ryan & Deci, 2024), which identifies relatedness as a key psychological driver of learning and motivation. By creating opportunities for students to interact, support each other, and feel connected to their peers, social media satisfies this need for relatedness and strengthens academic engagement. Empirical studies reinforce this view. Alshuaibi et al. (2018) found that social media use increases student motivation by enhancing their sense of connectedness, while Habes et al. (2018) demonstrated that online platforms improve the efficiency of group communication and foster effective collaboration on academic projects.

These findings highlight the value of integrating peer interaction into digital learning environments. When students use social media not only for social communication but also as part of structured academic practices, they benefit from increased engagement, stronger motivation, and improved collaborative skills. For higher education institutions, this underscores the importance of designing policies and teaching approaches that encourage responsible and purposeful use of social media to extend classroom learning into supportive online communities.

5.6.4 Social Media Actual Usage and Student–Faculty Interaction

The findings demonstrate a clear and positive relationship between social media actual usage (SMAU) and student interaction with faculty members (SIFM). This suggests that when students use social media for academic purposes, they are more likely to extend communication with their lecturers beyond the classroom. Social platforms such as WhatsApp and Telegram have become valuable channels through which students can pose questions, clarify doubts, and receive academic guidance in real time. Such opportunities for dialogue transform learning into a continuous process, allowing students to remain connected with faculty members outside scheduled lectures. These results support the arguments of Ansari and Khan (2020), who found that social media enables academically meaningful exchanges between students and instructors, and Habes et al. (2018), who emphasized its capacity to enhance communication by making guidance more accessible.

The significance of this finding can also be explained through Self-Determination Theory, which identifies relatedness as one of the key psychological needs necessary for effective learning and motivation (Ryan & Deci, 2024). By making faculty members more approachable through digital platforms, students' sense of relatedness is strengthened, which in turn fosters higher engagement and academic persistence. Boahene et al. (2019) observed similar dynamics in their study, noting that students who perceived social media as useful were more inclined to initiate discussions with their lecturers on these platforms. Such interactions often included conversations about assignments, clarification of lecture content, and collaborative engagement in academic tasks. The informality of social media reduces the sense of intimidation that can sometimes accompany traditional classroom interactions, creating a more open and supportive academic environment.

From a practical perspective, these results highlight the need for universities and faculty members to recognize the potential of social media as a legitimate academic communication tool. While it should not replace formal learning processes, its capacity to foster continuous dialogue and bridge communication gaps makes it a valuable complement to traditional teaching methods. Integrating social media into structured learning practices can ensure that students have timely access to feedback and support, while also strengthening the student–faculty relationship. In this way, social media contributes not only to better communication but also to the creation of a more inclusive and responsive academic community.

5.6.5 Peer Interaction as a Pathway to Academic Success

The findings of the study confirm that interaction among students has a significant and positive effect on academic performance. This relationship reflects the critical role that peer collaboration plays in shaping learning outcomes in higher education. When students engage in discussions, group projects, or informal academic exchanges, they not only share resources but also learn to evaluate and integrate different perspectives. Such collaborative practices foster deeper understanding, critical reflection, and collective problem-solving, which in turn improve academic achievement. This aligns with Hosen et al. (2021), who observed that peer interaction enhances comprehension by encouraging students to question assumptions, clarify difficult concepts, and reinforce learning through shared dialogue.

The strength of this relationship has been consistently demonstrated across diverse educational contexts. Sahoo and Khuntia (2024), for example, reported that students who participated more frequently in peer discussions and collaborative activities achieved higher grades and expressed

greater satisfaction with their academic experience. Their study suggests that peer interaction does not merely serve as a source of social support but is also a critical academic mechanism that fosters intellectual growth. Similarly, Sabah (2023) showed that collaborative peer networks create supportive learning environments where students are more likely to stay motivated, engaged, and accountable to shared goals. These environments provide a foundation for sustained focus and improved outcomes, particularly in contexts where individual study alone may not be sufficient to meet the demands of coursework.

From a theoretical perspective, these findings align with collaborative learning theories, which hold that knowledge is not transmitted passively but co-constructed through social interaction (Jacinto et al., 2021). When students actively engage with peers, they practice articulating complex ideas, develop problem-solving skills, and learn to critically evaluate arguments. These are essential academic competencies that directly translate into improved performance in both examinations and project-based assessments. The evidence from this study therefore underscores the idea that peer interaction is not an optional aspect of academic life but a central pathway through which students build knowledge and achieve success.

The confirmation of Hypothesis 5 adds weight to arguments for fostering collaborative learning environments in universities. By encouraging structured group activities, peer-led study sessions, and interactive classroom practices, institutions can strengthen the quality of student engagement and enhance academic performance. For instructors, this finding highlights the value of designing assessments and teaching strategies that promote collaboration rather than focusing solely on individual performance. In doing so, universities not only improve student outcomes but also

prepare learners with the interpersonal and teamwork skills that are increasingly valued in both academic and professional settings.

5.6.6 Faculty Support and Its Contribution to Student Achievement

The results of the study also confirm that student interaction with faculty members has a significant positive influence on academic performance. This relationship highlights the importance of academic support and mentorship in shaping the learning experiences of students. When learners engage with faculty, they gain access to clarification of complex concepts, constructive feedback, and encouragement that reinforces their academic confidence. These forms of engagement go beyond the traditional role of the classroom and create opportunities for deeper learning and improved outcomes. As Habes et al. (2018) observed, the growing use of social media has expanded the scope of faculty–student exchanges, allowing for more frequent and flexible communication outside scheduled lecture hours. This shift has made it easier for students to seek assistance, access timely feedback, and maintain continuous academic dialogue with instructors, all of which contribute to persistence and stronger performance. The significance of faculty support in academic achievement has also been confirmed in recent empirical studies. Qureshi et al. (2023) found that students who reported active engagement with faculty through digital platforms were not only more satisfied with their learning experiences but also performed better in assessments. Similarly, Liu et al. (2022) demonstrated that online communication with faculty improved students' confidence by ensuring that guidance and clarification were available when needed. These studies underscore the idea that interaction with faculty does not simply supplement learning but serves as a vital component of the academic process, fostering both intellectual development and motivation.

Viewed through the lens of learning theory, this finding highlights the role of faculty as facilitators of both cognitive and affective dimensions of education. By providing timely guidance, faculty members help students to better understand subject matter, while also reducing feelings of isolation that often accompany independent study. This dual function explains why interaction with faculty consistently emerges as a predictor of strong academic outcomes. Moreover, the results suggest that when students perceive faculty as approachable and supportive, they are more likely to remain engaged in their studies, seek clarification when needed, and develop a sustained commitment to academic success.

The confirmation of Hypothesis 6 therefore emphasizes the centrality of faculty–student engagement in higher education. Universities can build on this evidence by encouraging lecturers to integrate social media and other digital platforms into their teaching practices in ways that promote constructive interaction. Structured opportunities for faculty support, such as virtual office hours, online discussion forums, or course-specific groups, can strengthen academic connectedness and provide students with the guidance they need to excel. By nurturing open and responsive communication channels, institutions not only enhance academic performance but also create learning environments that prepare students for collaborative and professional challenges beyond university life.

5.7 Chapter Conclusion

This chapter presented the results of the structural model analysis and discussed their implications for existing literature. The findings showed that both perceived usefulness and perceived ease of use are important predictors of students' adoption of social media for academic purposes,

supporting the assumptions of the Technology Acceptance Model. The analysis further revealed that social media usage promotes interaction among students and with faculty, which in turn enhances academic performance, while also increasing the risk of addictive behaviour that negatively affects outcomes. The structural model demonstrated moderate to substantial explanatory power, with acceptable goodness of fit, meaningful effect sizes, and strong predictive relevance. The results highlight the dual role of social media as both a facilitator of collaborative learning and a potential source of distraction, providing a balanced understanding of its influence on students' academic experiences.

CHAPTER SIX

SUMMARY OF FINDINGS, RECOMMENDATIONS, AND CONCLUSIONS

6.0 Chapter Overview

This chapter presents a synthesis of the study's findings and places them within a broader academic and practical context. It revisits the objectives outlined in Chapter One and demonstrates how the results addressed the research questions. The discussion highlights the study's contributions to theory, practice, and policy by showing how social media use, perceived usefulness, perceived ease of use, and student interactions with peers and faculty shape academic performance in the Ghanaian higher education setting. The chapter also outlines recommendations for stakeholders such as university administrators, faculty, and policymakers who are positioned to leverage these insights for improved teaching and learning. Finally, it acknowledges the study's limitations and suggests possible avenues for future research, ensuring that the work contributes to both immediate practice and the longer-term development of knowledge in the field.

6.1 Research Summary

The findings of this study confirm that perceived usefulness (PU) and perceived ease of use (PEOU) are central determinants of students' adoption of social media for academic purposes. Consistent with the Technology Acceptance Model (Davis, 1989), the results demonstrate that students are more likely to rely on social media platforms when they believe these tools provide tangible academic benefits and are easy to navigate. This was evident in the way platforms such as WhatsApp, Facebook, and YouTube have been incorporated into students' learning practices. Their perceived value lies not only in quick access to information but also in enhancing efficiency, enabling collaboration, and providing flexibility in managing academic activities. Ease of use

further reinforces this adoption by reducing barriers to engagement, making social media a practical and attractive resource for university students in Ghana.

In addition, the study highlights the important role of social media in fostering interaction among students**.** Through active use of these platforms, learners engage in peer-to-peer discussions, resource sharing, and group coordination, which extend learning opportunities beyond the classroom. Such interactions contribute to deeper understanding, motivation, and academic persistence. Similarly, student–faculty interactions are strengthened through digital engagement**,** as social media provides channels for clarifying concepts, receiving feedback, and maintaining communication outside traditional class hours. These findings align with existing research, which stresses that digital platforms help bridge gaps between students and instructors while creating opportunities for more inclusive and continuous academic dialogue (Ansari & Khan, 2020; Qureshi et al., 2023).

Finally, the study establishes a direct link between academic interactions and performance. Students who actively engage with peers and faculty through social media report stronger academic outcomes, reflecting the benefits of collaboration, guidance, and shared learning. These results affirm the relevance of collaborative and interactive learning theories, which argue that knowledge is enriched when learners engage in dialogue, receive feedback, and participate in group-based activities. By showing how peer and faculty interactions mediated by social media contribute to academic achievement, the study demonstrates the potential of digital platforms to support the goals of higher education in resource-constrained contexts such as Ghana.

6.2 Summary of Key Research Findings

The study shows that perceived usefulness and perceived ease of use are both important in shaping how students adopt social media for academic purposes. The results confirmed that students are more willing to use these platforms when they believe the tools bring value to their studies and when the platforms are easy to operate. This outcome supports the assumptions of the Technology Acceptance Model, which highlights usefulness and usability as the main conditions for technology adoption. In the context of Ghanaian higher education, this finding means that students are encouraged to adopt social media when it helps them complete academic tasks more efficiently and when the platforms are simple enough to navigate without unnecessary barriers. The findings also make it clear that when students actively use social media, their academic interactions become stronger. Students who use platforms such as WhatsApp, Facebook, and YouTube are more engaged with their peers through group discussions, joint assignments, and resource sharing. These platforms create digital spaces where students continue their learning beyond the classroom, building networks of support and collaboration. In addition, social media helps students connect with their lecturers. It provides opportunities to ask questions, seek clarification, and receive timely feedback. This extended access to faculty strengthens the learning process and reduces the gap between students and instructors.

A further insight from the study is that these interactions, both with peers and with faculty, make a meaningful contribution to academic performance. Students benefit from peer exchanges that challenge their thinking and expose them to different perspectives. At the same time, guidance and support from lecturers help them stay on track with their studies and improve their confidence in completing academic tasks. These combined effects show that social media, when used

constructively, supports better learning outcomes by linking students more closely with both their peers and their instructors. What emerges clearly from the findings is that social media is not only a channel for communication but also a tool that can be integrated into academic routines to improve performance. Its role depends strongly on whether students perceive it as useful and easy to use, and the value of these perceptions is reflected in the quality of their interactions and achievements. In Ghanaian universities, where digital platforms are widely available, this creates an opportunity to position social media as a practical resource for collaboration and learning that complements the formal teaching environment.

6.3 Conclusions of the study

To provide a clear link between the research questions and the findings, the conclusions are discussed below alongside a summary table. The first research question explored how perceived usefulness and perceived ease of use influence the adoption of social media for academic purposes among university students. The results of the structural model confirmed that both constructs are strong and significant predictors of adoption. Students are more likely to use social media platforms when they believe these platforms will add value to their academic work and when they are easy to navigate. In practice, the popularity of WhatsApp and YouTube reflects their perceived efficiency and user-friendliness, as features such as group chats, file sharing, and instructional videos offer clear benefits to students' learning routines. These findings are consistent with the Technology Acceptance Model (TAM), which emphasises usefulness and ease of use as central drivers of adoption (Davis, 1989), and they align with studies such as Ansari and Khan (2020) that reported similar patterns in higher education. Within the University of Ghana context, adoption reflects rational decisions by students who select tools that are both practical and beneficial.

The second research question examined how social media usage supports collaborative learning, focusing on student interactions with peers and faculty members. The findings provided strong evidence that social media enhances collaboration by creating spaces for knowledge exchange, discussion, and resource sharing. Actual usage significantly increased peer-to-peer interaction and faculty–student engagement, showing that digital platforms function as more than informal communication tools. WhatsApp enabled real-time discussions among peers, while YouTube provided access to educational material that reinforced classroom learning. These patterns echo Alamri et al. (2020a), who noted that social media fosters collaboration, and they extend this insight by situating the evidence within the Ghanaian higher education context. Viewed through Self-Determination Theory (SDT), the results also illustrate how social media satisfies students' need for relatedness, making academic engagement more interactive and inclusive.

The third research question considered the effect of social media usage on academic performance. The study found that academic-related interactions with both peers and faculty members contributed positively to students' academic outcomes. Collaborative learning through social media was shown to strengthen performance by providing additional opportunities for engagement, resource sharing, and mutual support. This finding supports earlier research such as Sobaih et al. (2020), who emphasised the value of social interaction in improving learning achievement. By demonstrating these effects within the University of Ghana, the study provides context-specific evidence that purposeful and collaborative use of social media can enhance student performance even in resource-constrained environments.

Table 6.1 Summary of Research Findings

Research Questions	Research Findings	Supporting Literature	Research Implications and Contributions
1. How do perceived usefulness and perceived ease of use influence the actual usage of social media for academic purposes among university students?	The analysis confirmed that both perceived usefulness and perceived ease of use have significant positive effects on students' adoption of social media for learning. Students are more likely to engage with platforms that are simple to navigate and provide clear academic value, such as access to resources and support for group collaboration.	Davis (1989); Ansari & Khan (2020)	Extends the Technology Acceptance Model within the Ghanaian higher education context by demonstrating that adoption is shaped by perceptions of both usefulness and ease. Provides practical insights for designing and promoting educational technologies that align with students' needs and expectations.
2. In what ways does social media usage affect collaborative learning, particularly student interaction with peers and faculty members?	Social media usage was shown to foster collaborative learning by enhancing peer-to-peer engagement and strengthening interaction with faculty members. These platforms extend the learning environment	Alamri et al. (2020)	Provides empirical support for Self-Determination Theory by demonstrating how social media satisfies the need for relatedness among

	beyond the classroom by supporting real-time discussions, knowledge sharing, and academic support networks.		students. Highlights the role of digital platforms in creating active learning communities and strengthening faculty–student connections in higher education.
3. What are the effects of social media usage on the academic performance of university students?	The study found that social media usage positively influences academic performance through enhanced peer collaboration and greater faculty support. These interactions improve understanding of course material, sustain student motivation, and contribute to stronger academic outcomes.	Sobaih et al. (2020); Caratiquit & Caratiquit (2023)	Demonstrates that social media serves as a practical tool for improving academic outcomes when used intentionally. Offers evidence to guide educators and policymakers in integrating social media into teaching and learning strategies to maximise collaborative and performance-related benefits.

6.4 Contributions of the Study

This study makes contributions to theory, practice, methodology, and the specific context of higher education in Ghana. By drawing on the Technology Acceptance Model (TAM) and Self-

Determination Theory (SDT), and applying structural equation modelling (SEM), the research adds to existing knowledge while offering practical lessons for students, educators, and policymakers.

In terms of theory, the findings show how established models of technology adoption can be applied within higher education. The Technology Acceptance Model, which highlights perceived usefulness and ease of use as key drivers of adoption, was supported in this study. Students were more likely to adopt social media when they found it both helpful and easy to use. Self-Determination Theory further explained the role of social media by showing that interactions with peers and faculty meet students' need for connection and collaboration, which in turn supports better learning outcomes. By linking TAM and SDT in one framework, the study demonstrates how technology adoption and human motivation combine to shape academic behaviour, adding depth to both theories in the context of education.

With regard to practice, the study highlights how social media can support teaching and learning when used purposefully. Platforms such as WhatsApp, Facebook, and YouTube were found to enable collaboration, resource sharing, and communication between students and with faculty members. These tools extended learning beyond the classroom by allowing discussions to continue after lectures and making resources more easily accessible. The findings suggest that when integrated carefully into teaching strategies, social media can strengthen engagement and foster collaboration. For students, the results confirm the value of treating these platforms as academic tools rather than only social spaces. On the methodological side, the research demonstrates the usefulness of structural equation modelling for studying technology use in African higher

education. Using data from 400 students, SEM made it possible to test complex relationships between perceived usefulness, ease of use, actual usage, peer interaction, faculty interaction, and academic performance. This approach provided strong evidence for the study's conclusions and offers a model that future researchers in similar contexts can apply when investigating technology and learning.

Finally, the study contributes context-specific insights by focusing on Ghanaian higher education, an area that has received less attention in the literature. Much of the research on social media in education comes from developed countries, where resources and infrastructure are different. This study shows how Ghanaian students use social media to cope with challenges such as large class sizes, limited access to textbooks, and inadequate infrastructure. At the same time, it draws attention to ongoing barriers, including unstable internet connectivity and limited institutional support for digital learning. By situating the analysis within Ghana, the study adds to global debates on digital learning while providing evidence that is directly useful for national policy and institutional practice.

6.5.1 Recommendations for Educators

Educators play a central role in shaping how students use social media for academic purposes, and the findings of this study emphasise the value of integrating these platforms purposefully into teaching and learning. The results showed that social media substantially improves peer-to-peer interaction as well as engagement between students and faculty. Teachers who actively incorporate platforms such as WhatsApp, Facebook, and YouTube into their instructional practices can create more interactive and collaborative learning environments. Practical approaches include

establishing class groups for guided discussions, encouraging group projects that rely on online collaboration, and using short video tutorials to reinforce classroom teaching. These structured practices help sustain students' interest and extend collaboration beyond the physical classroom.

In addition, educators can provide direction on how to make the most of these platforms for academic purposes. Setting clear expectations on the appropriate use of social media for coursework helps ensure that students remain focused on learning objectives. Regular feedback delivered through these platforms also strengthens academic engagement and builds closer connections between faculty and students. Professional development workshops can further prepare educators to integrate digital tools effectively, equipping them with strategies to maximise the benefits of social media in ways that enhance learning outcomes.

6.5.2 Recommendations for Students

Students also have a responsibility to use social media in ways that support their learning. The study showed that academic performance improves when students engage in collaborative discussions and peer learning through platforms such as WhatsApp and Facebook. Joining study groups, sharing resources, and participating in online academic discussions can help students gain a deeper understanding of course material. YouTube and similar platforms can also be used to access tutorials and explanations that clarify difficult concepts and complement classroom teaching.

At the same time, students need to manage their use of social media carefully to avoid distraction. Setting personal boundaries between academic and non-academic activities is essential. For example, students can dedicate specific times of the day to academic use, limit recreational

browsing during study hours, and make use of digital tools that monitor screen time. Choosing platforms that are easy to use and directly relevant to their academic needs is also important, since spreading attention across too many applications may reduce focus. By making deliberate choices and balancing their usage, students can gain the full academic benefits of social media while minimizing potential drawbacks.

6.6 Limitations of the Study

While this study provides meaningful insights into the role of social media in academic life at the University of Ghana, several limitations must be acknowledged. First, the sample was limited to 400 students from a single institution, which restricts the extent to which the findings can be generalized to other universities in Ghana or across different cultural and institutional contexts. This limitation highlights the need for caution in applying the conclusions too broadly without further comparative research. Second, the reliance on self-reported survey data may introduce minor inaccuracies, as students might overestimate or underestimate their social media use and academic outcomes, potentially affecting the precision of the results.

In addition, the study focused primarily on three widely used platforms, WhatsApp, YouTube, and Facebook, while excluding newer and rapidly growing platforms such as TikTok and Instagram, which are increasingly popular among university students. As a result, the findings may not fully capture the evolving landscape of student social media use. Finally, the cross-sectional design of the study, which collected data at a single point in time, limits the ability to assess how the relationship between social media usage, collaboration, and performance may change over time.

A longitudinal approach would have provided deeper insights into how patterns of use and their impacts develop across an academic career.

6.7 Future Research Directions

Future studies can build on these findings in several important ways. A first step would be to conduct longitudinal research that follows students over time to assess how the benefits of social media evolve with continued usage and exposure. Such designs would help determine whether the positive effects on collaboration intensify, diminish, or stabilize across students' academic journeys. Second, comparative studies across different universities within Ghana, or between Ghana and other African countries, would broaden the applicability of the findings by accounting for variations in resources, infrastructure, and educational cultures.

Further research should also examine the academic implications of emerging platforms such as TikTok or Instagram, which are increasingly being used by students both for entertainment and, in some cases, for accessing educational content. Understanding their potential role in collaborative learning would provide a fuller picture of digital engagement among students. Lastly, experimental and intervention-based studies could evaluate practical strategies to enhance the benefits of social media. For instance, initiatives such as digital wellness programs, awareness campaigns, or structured curricula that embed social media into academic activities could be tested to assess their effectiveness in improving student learning outcomes. By pursuing these directions, future research can continue to enrich our understanding of the complex and evolving role of social media in higher education.

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APPENDIX

UNIVERSITY OF GHANA

QUESTIONNAIRE ON THE ROLE OF SOCIAL MEDIA USAGE IN ENHANCING COLLABORATIVE LEARNING AND ACADEMIC PERFORMANCE AMONG UNIVERSITY STUDENTS

Dear Respondent,

My name is Elvis Compson, a master's student pursuing a Master of Philosophy (MPhil) at the University of Ghana Business School. As part of the requirements for the program, I kindly request your assistance in completing this questionnaire.

This questionnaire forms part of a research study on *"The Role of Social Media Usage in Enhancing Collaborative Learning and Academic Performance at the University of Ghana."* The purpose of the study is to examine how the use of social media contributes to students' collaborative learning efforts and their academic performance.

Your responses will provide valuable insights into the academic applications of social media and help shape future academic strategies and policies. Please note that your participation is entirely voluntary, and all responses will be treated with strict confidentiality.

Should you require any further clarification, you may contact me via email at ecompson@st.edu.gh or by phone on **+233 541 386 476**. You may also reach out to my supervisor at eakolog@ug.edu.gh

Thank you for your time and contribution to this research.

Section 1: Demographic Information

1. Gender:

a. Male b. Female

2. Age:

a. Under 18 years b. 18-25 years

c. 26-30 years d. 31 and above years

3. Year of Study:

a. First Year b. Second Year c. Third Year

d. Fourth Year e. Postgraduate (Master's/PhD) f. Other (please specify)

4. Field of Study:

Please select the option that best describes your primary field of study. You may also specify if your program does not appear on the list.

a. Faculty of Arts b. Faculty of Social Sciences c. Faculty of Business

d. Faculty of Law e. Faculty of Basic and Applied Sciences

f. Faculty of Education g. Faculty of Health Sciences h. Other (please specify)

5. Social Media Platforms Used for Academic Purposes:

Please check all that apply:

a. WhatsApp b. Facebook c. Instagram d. Tikor

e. YouTube f. X (Twitter) g. LinkedIn h. Telegram

k. Other (please specify)

Section 2: Perceived Usefulness

The following statements measure how useful you perceive social media to be for your academic tasks. Please indicate your level of agreement on a 5-point Likert scale where 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree.

Code	Statement	1	2	3	4	5
PU1	Using social media helps me accomplish academic tasks more quickly.					
PU2	Social media improves the quality of my academic work.					
PU3	Social media makes it easier to share knowledge with my classmates.					

PU4	Social media enhances my effectiveness in group assignments.
PU5	I find social media useful for collaborating on academic projects.
PU6	Overall, using social media benefits my learning activities.

Section 3: Perceived Ease of Use (PEOU)

These items assess how easy you find it to use social media for academic purposes. Please indicate your level of agreement on a 5-point Likert scale where 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree.

Code	Statement	1	2	3	4	5
PEOU1	Learning to use social media for my studies is easy for me.					
PEOU2	I find it straightforward to use social media for academic purposes.					
PEOU3	It is easy for me to become skilled in using social media for learning.					
PEOU4	I can easily navigate different social media platforms for schoolwork.					

PEOU5	Social media platforms are user-friendly for my academic needs.
PEOU6	Using social media for study tasks requires little effort from me.

Section 4: Social Media Actual Usage (SMAU)

The following items are designed to assess how frequently and in what ways you use social media for academic and study-related purposes. Please respond to each statement by selecting the option that best represents your typical behaviour. Use the 5-point Likert scale where 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree.

Code	Statement	1	2	3	4	5
SMAU1	I frequently use social media to support my studies and learning activities.					
SMAU2	I often use social media to share educational information with my friends.					
SMAU3	I regularly use social media to communicate with my lecturers for academic purposes.					
SMAU4	I actively use social media to find and access study materials.					

SMAU5	I use social media to participate in discussions related to my coursework.
SMAU6	I frequently rely on social media to coordinate academic group work.

Section 5: Interaction among Students (IAS)

The following statements capture how social media helps you interact and collaborate with fellow students. Please indicate your level of agreement on a 5-point Likert scale where 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree.

Code	Statement	1	2	3	4	5
IAS1	I frequently share learning experiences with other students through social media.					
IAS2	I communicate regularly with classmates about academic work using social media.					
IAS3	Social media helps me feel connected with other students in my courses.					
IAS4	Discussing course topics with classmates on social media helps me understand better.					
IAS5	Social media encourages me to participate in group study activities with peers.					

IAS6	Collaborating with other students on social media makes learning more interesting.	

Section 6: Student Interaction with Faculty Members (SIFM)

These items ask about your interaction with lecturers and instructors through social media. Please indicate your level of agreement on a 5-point Likert scale where 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree.

Code	Statement	1	2	3	4	5
SIFM1	My faculty members are approachable when I reach out via social media.					
SIFM2	My lecturers respond promptly to my messages on social media.					
SIFM3	I feel valued when communicating with faculty members through social media.					
SIFM4	My faculty members show concern for my progress when we interact online.					
SIFM5	My faculty members treat me with respect when interacting on social media.					
SIFM6	I feel more connected to my faculty members because we communicate on social media.					

Section 8: Academic Performance

these statements ask about your academic performance and how social media might influence it. Please indicate your level of agreement on a 5-point Likert scale where 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree.

Code	Statement	1	2	3	4	5
AP1	I am satisfied with my academic performance.					
AP2	My grades meet my expectations.					
AP3	Using social media for academic purposes has improved my performance.					
AP4	I perform well in group assignments with the help of social media.					
AP5	My study results have improved because of social media-based discussions.					
AP6	Overall, my academic achievements reflect my effort.					